



Weber, Gulick & Strongin /TT3761

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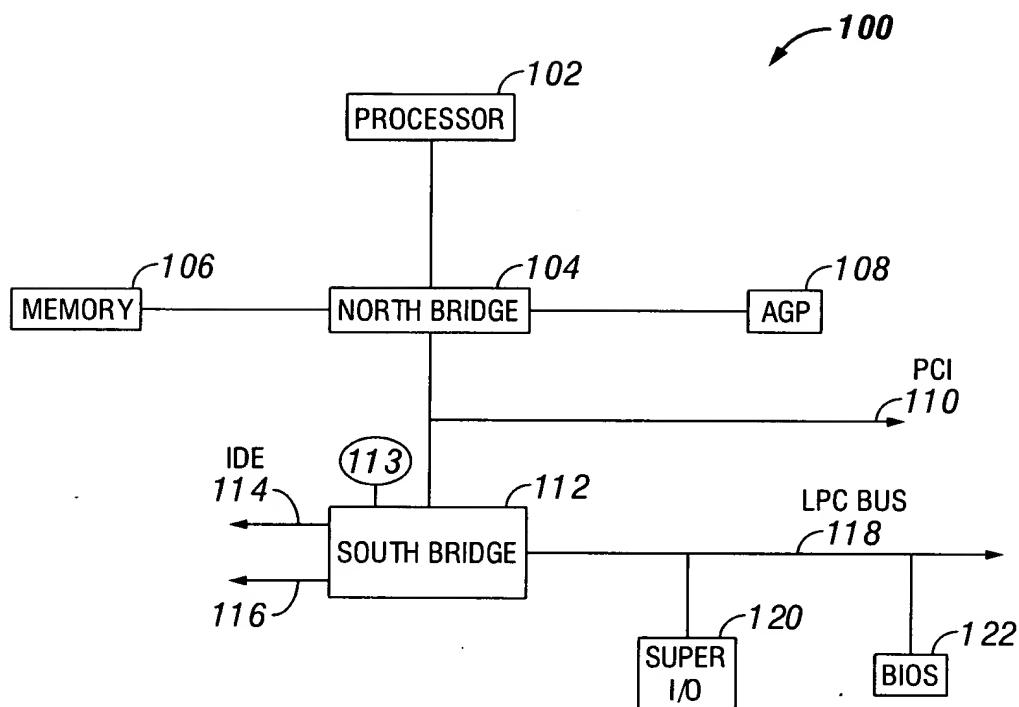


FIG. 1A
(Prior Art)

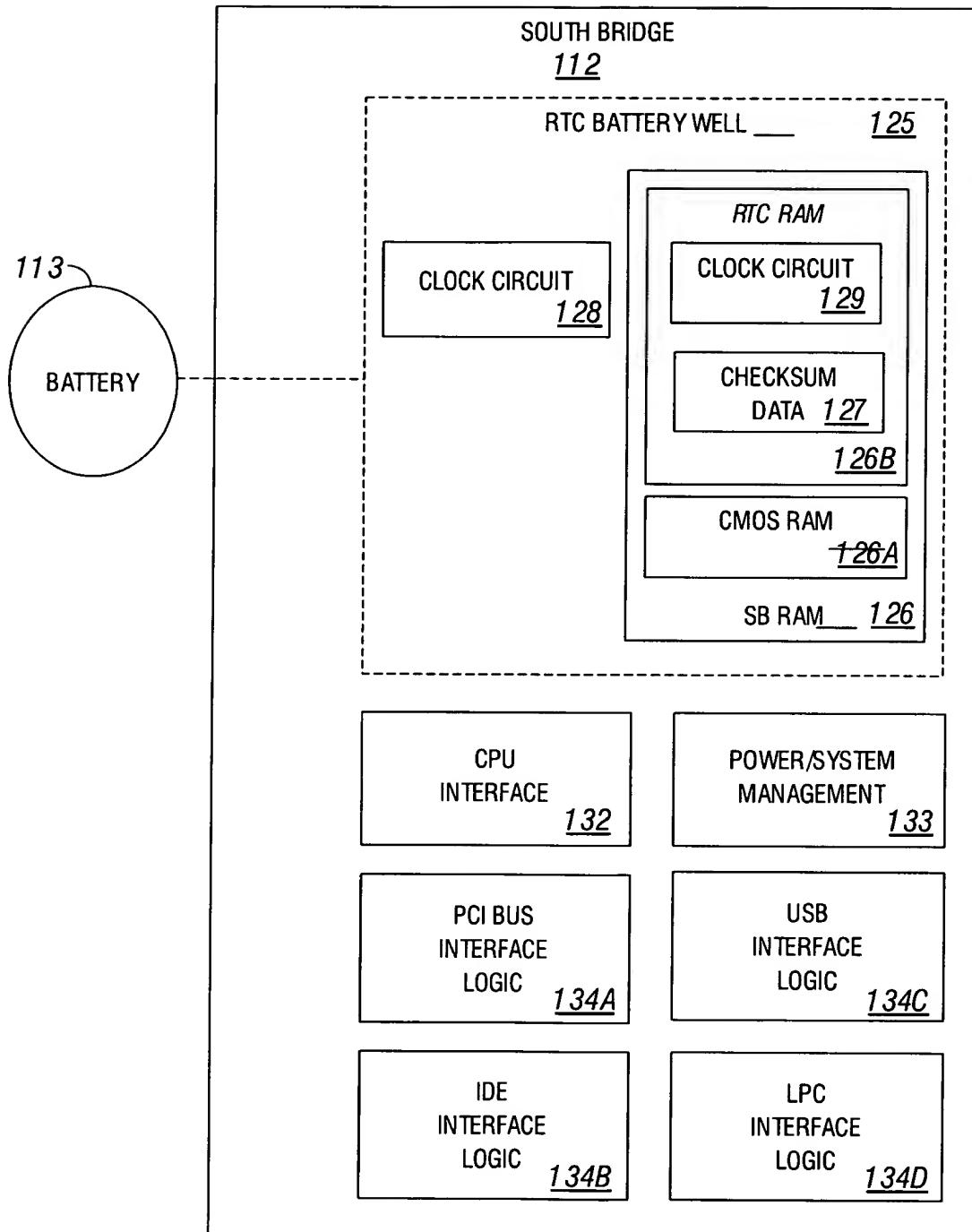
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FIG. 1B
(Prior Art)

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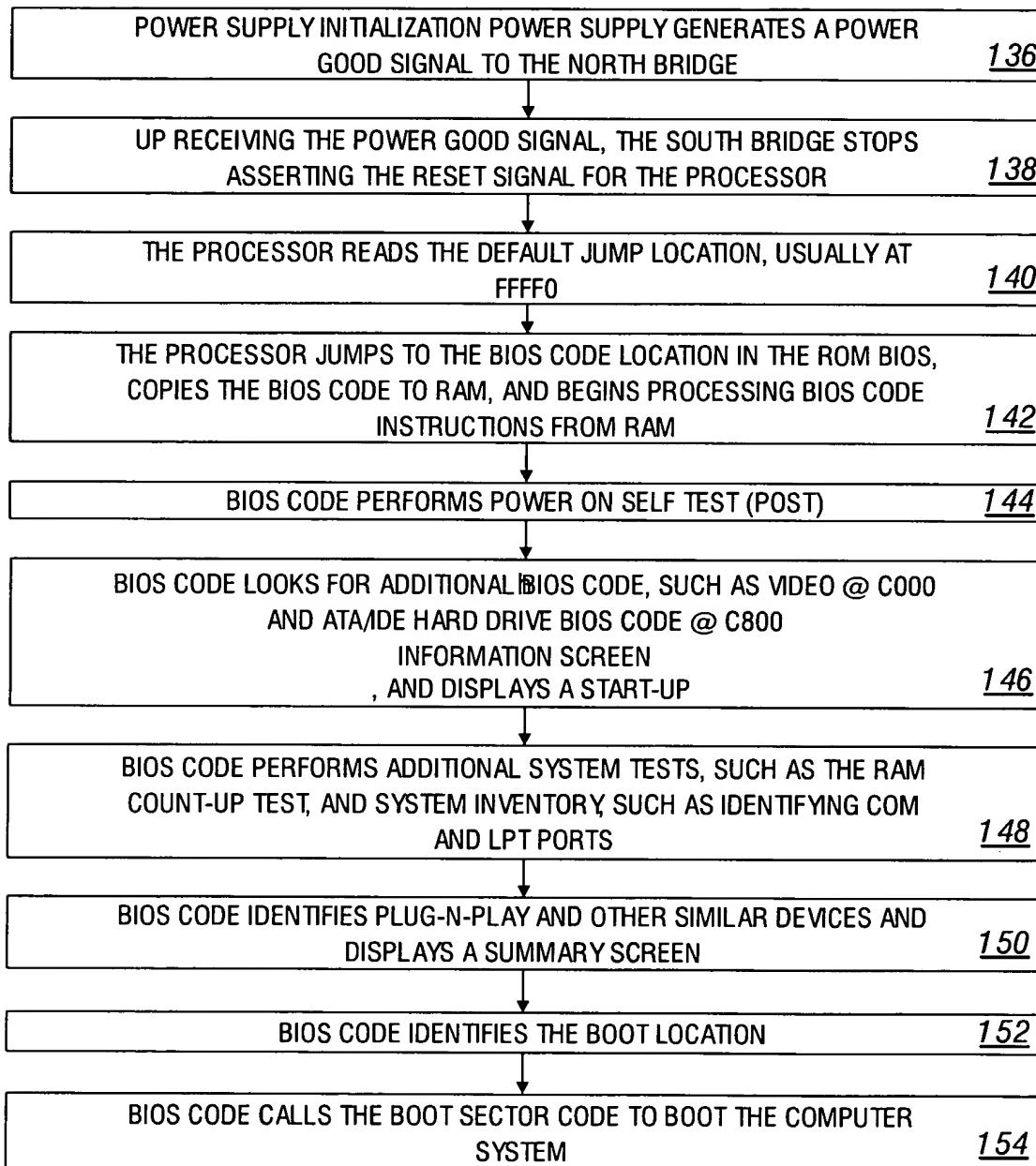


FIG. 2A
(Prior Art)

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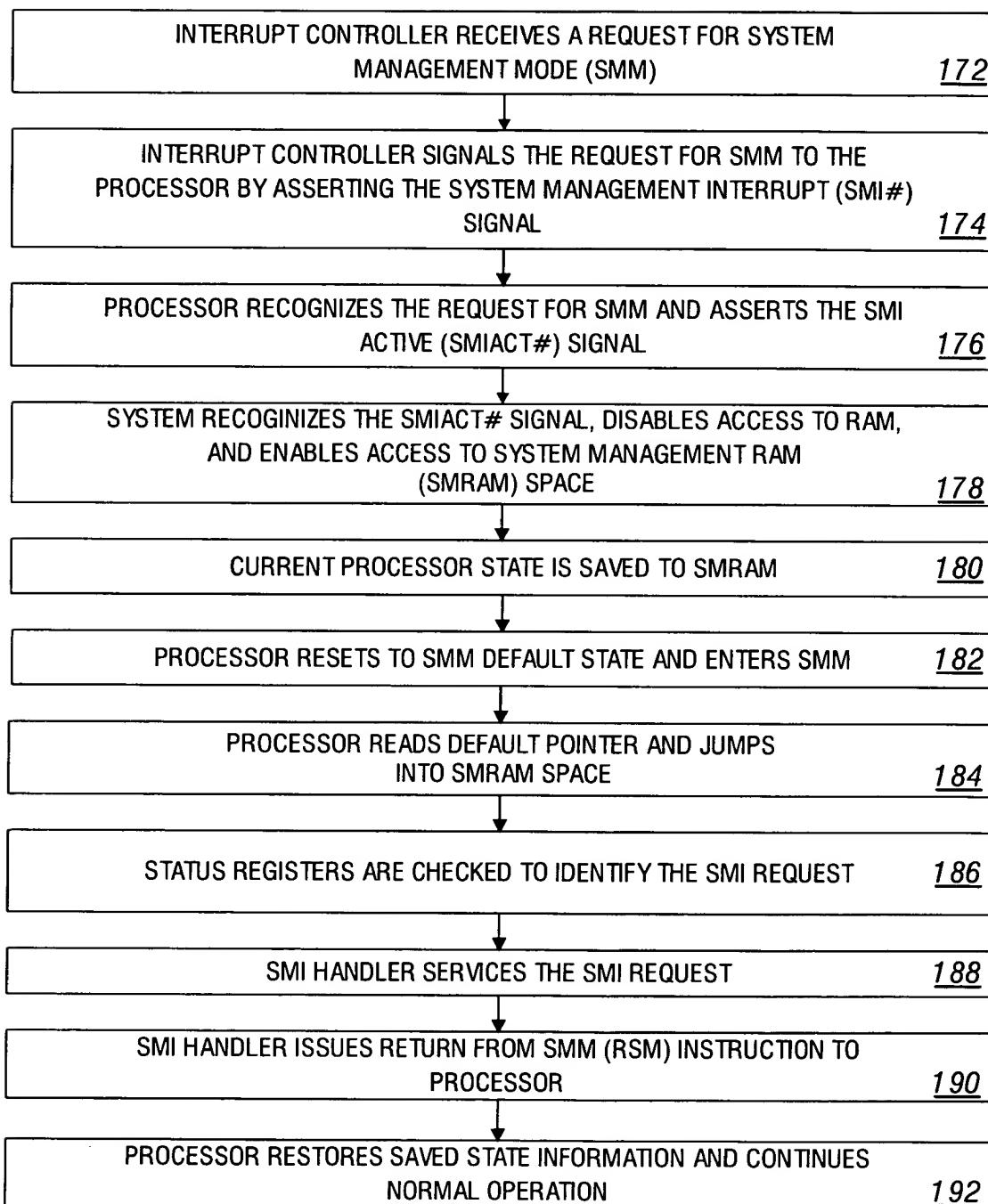


FIG. 2B
(Prior Art)

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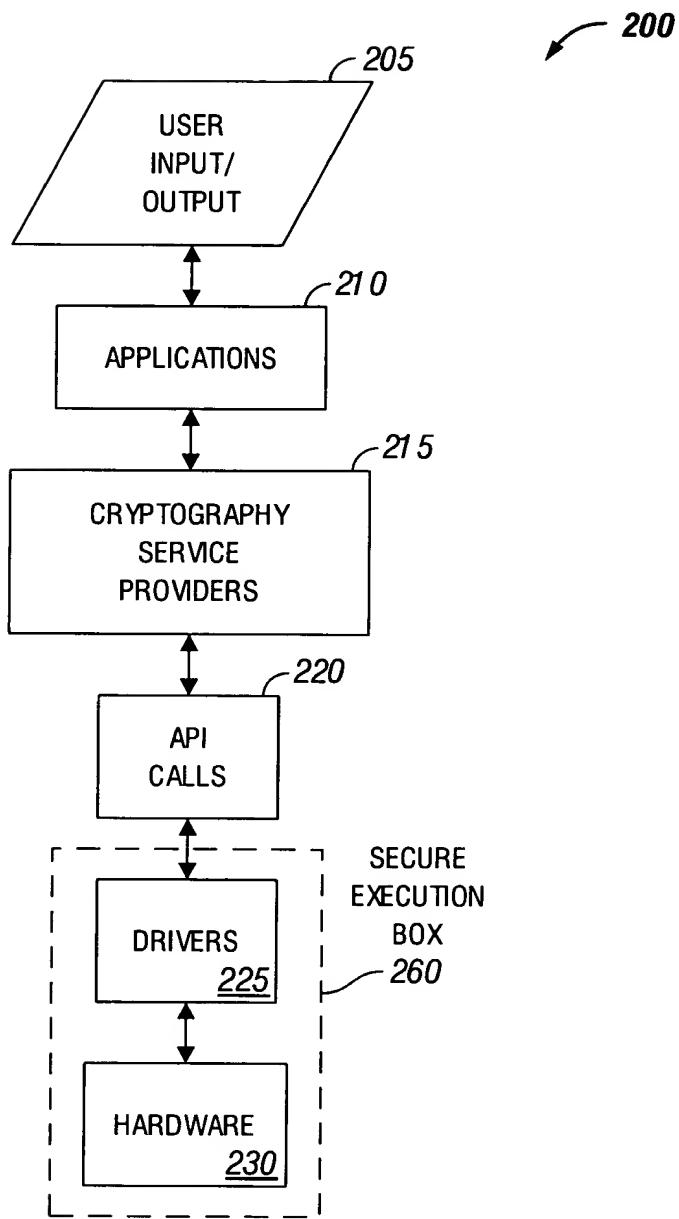


FIG. 3

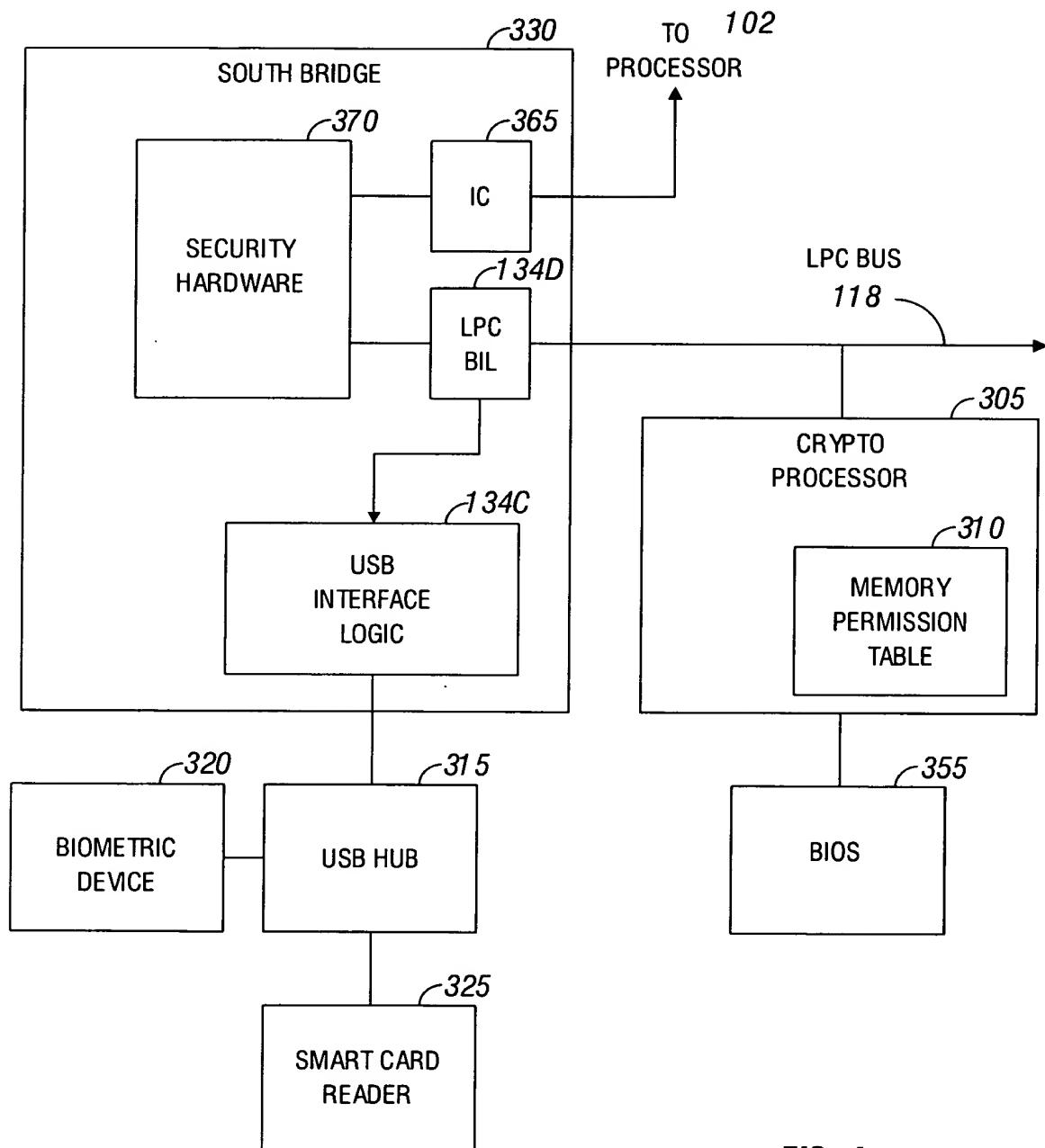
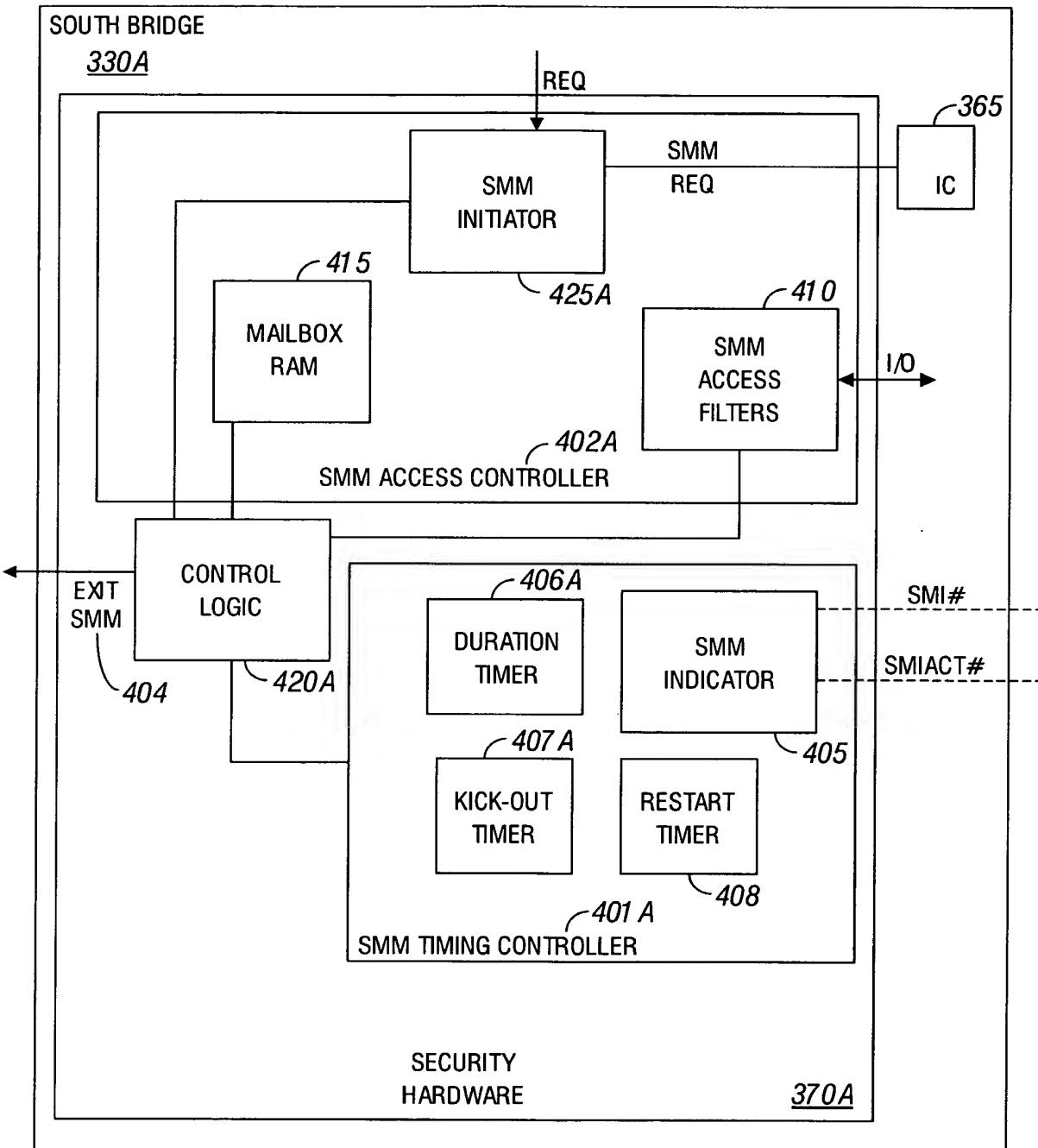


FIG. 4

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**FIG. 5A**

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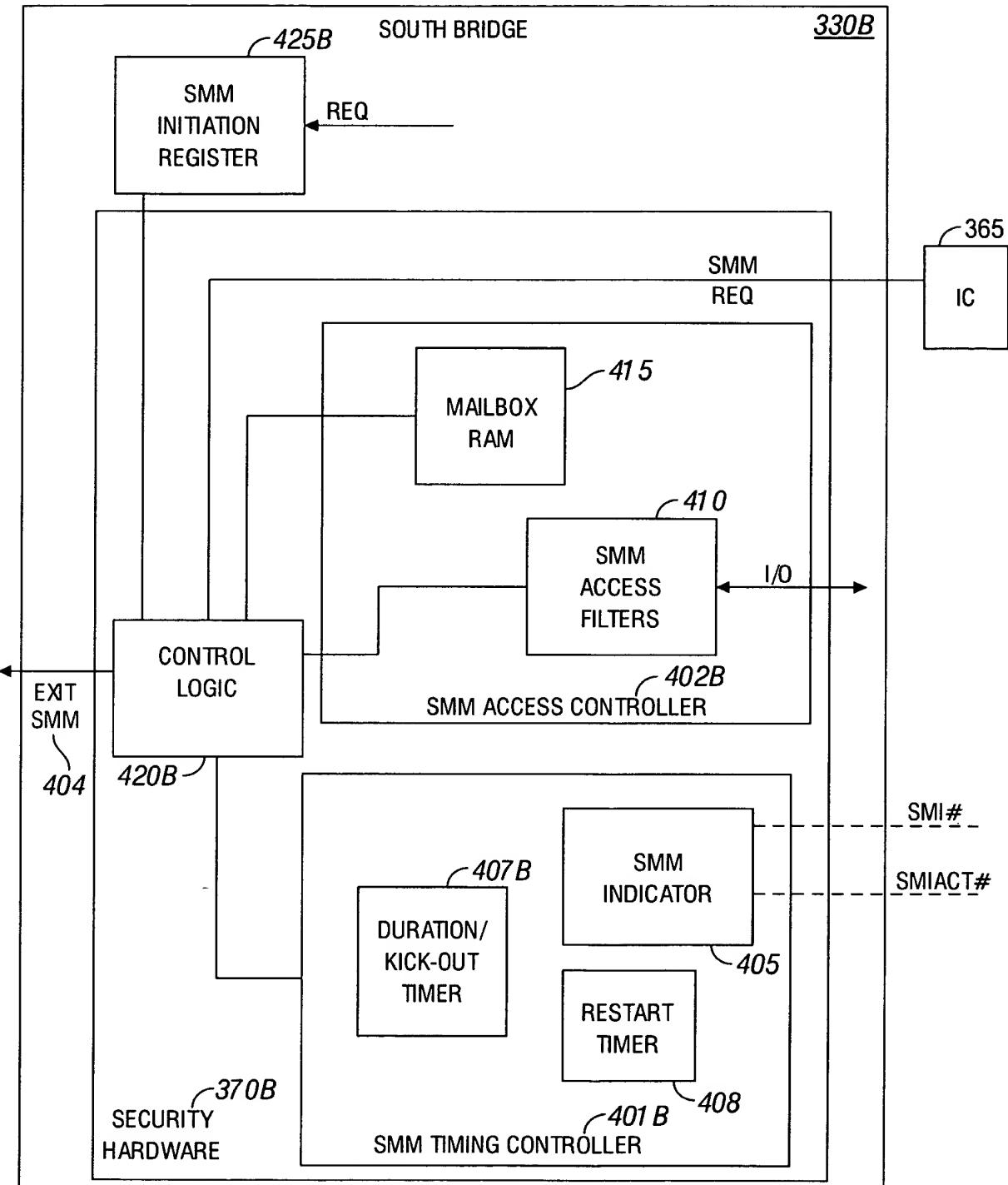
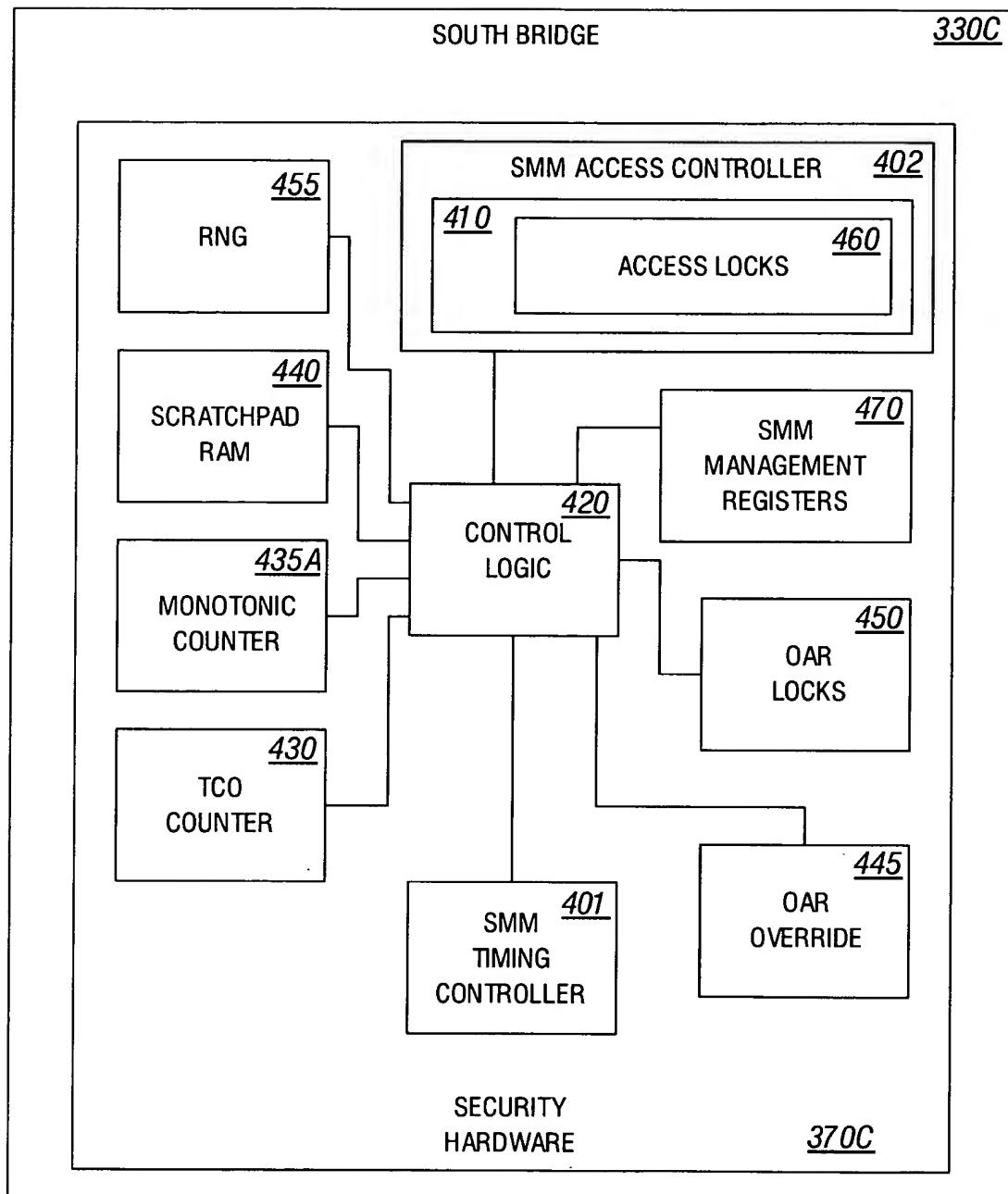


FIG. 5B

9/73**FIG. 6**

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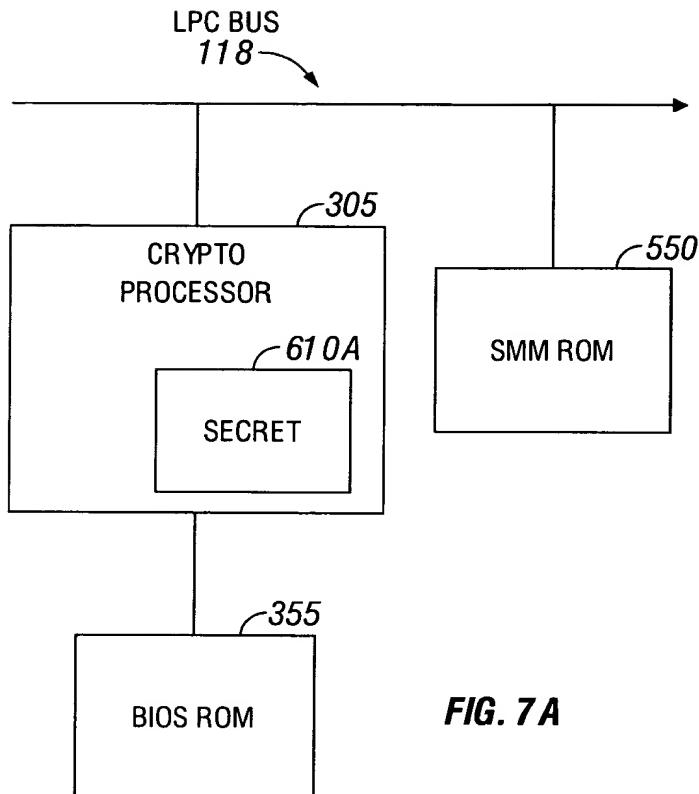


FIG. 7A

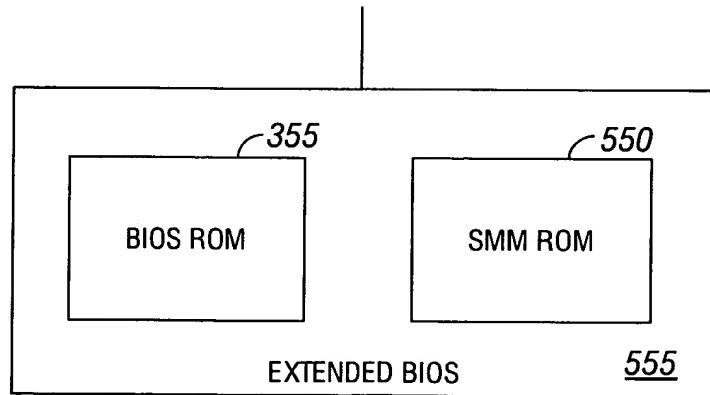


FIG. 7B

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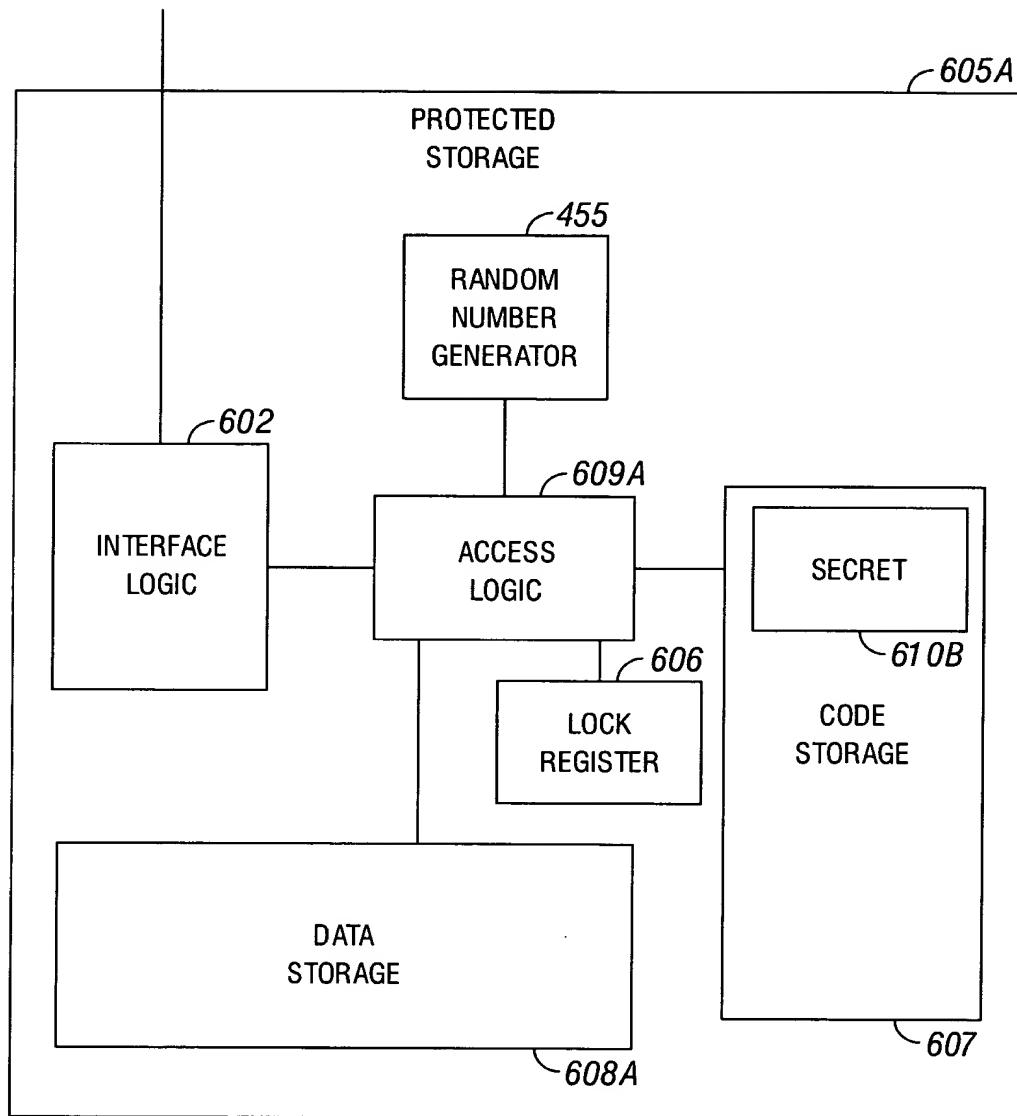


FIG. 7C

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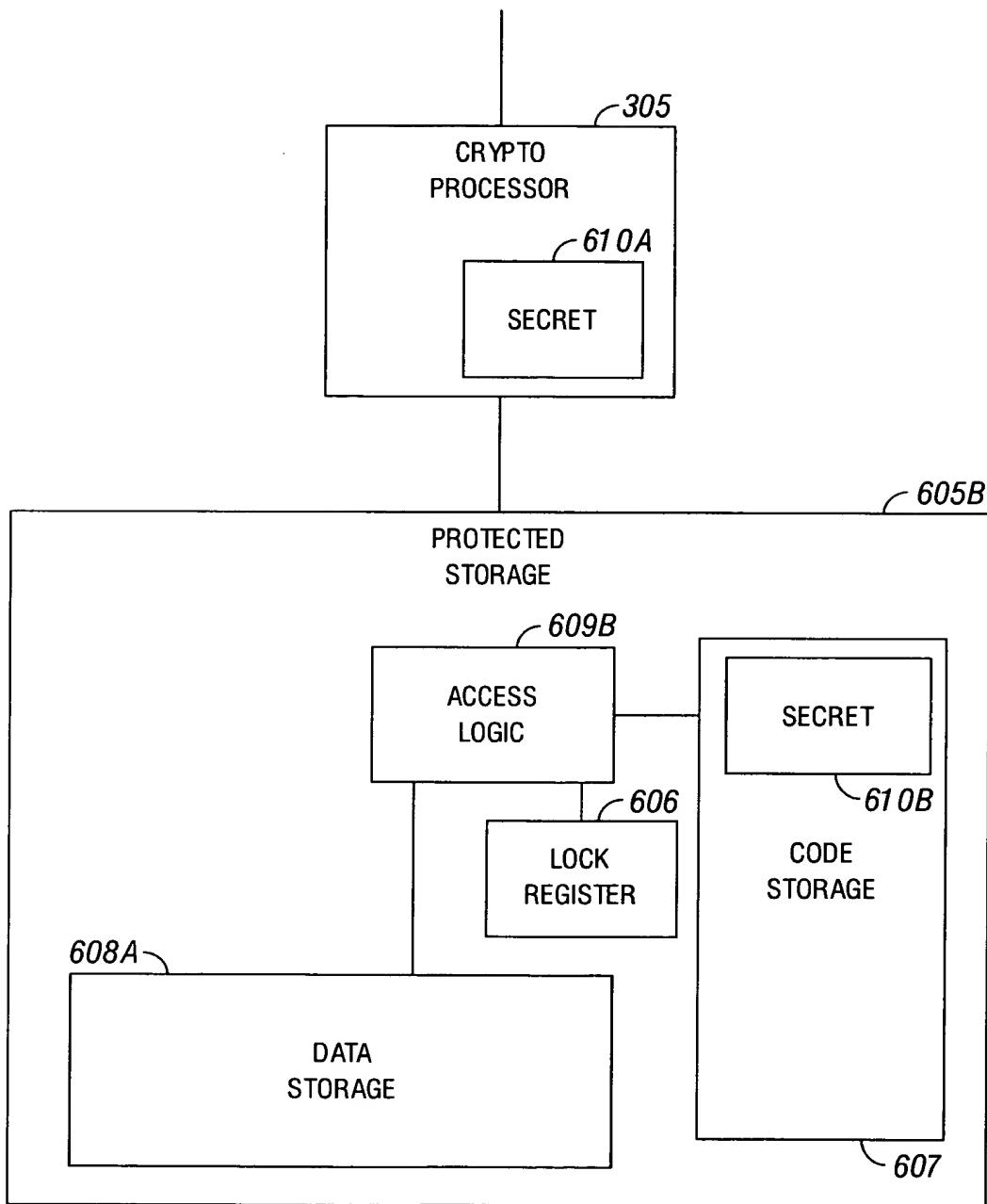


FIG. 7D

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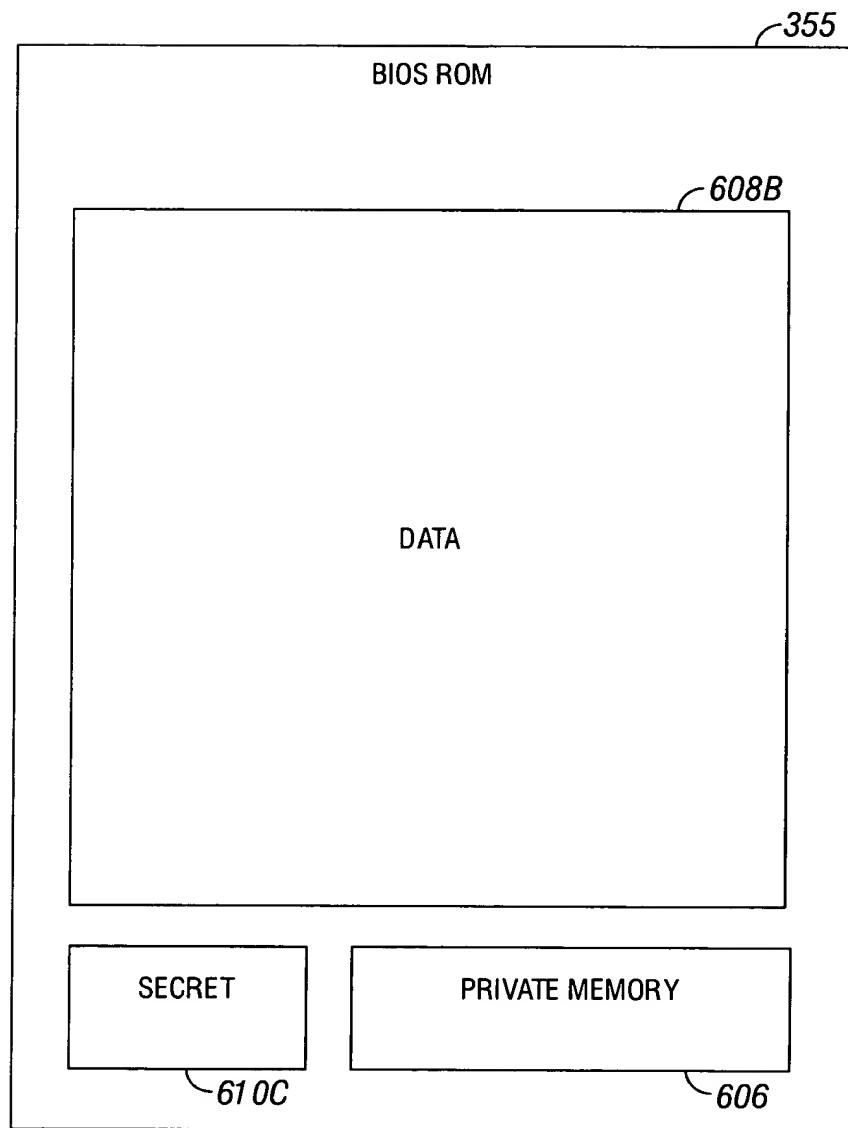


FIG. 8A

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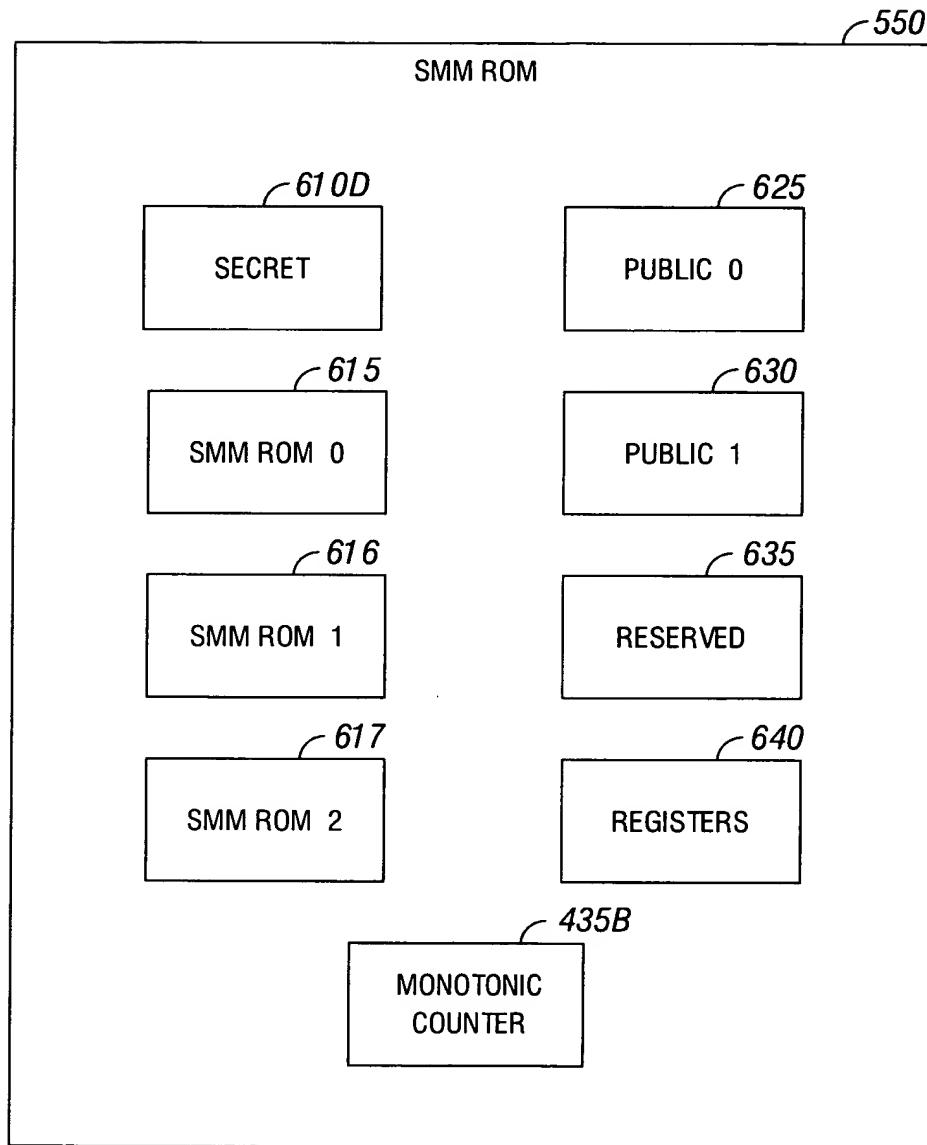


FIG. 8B

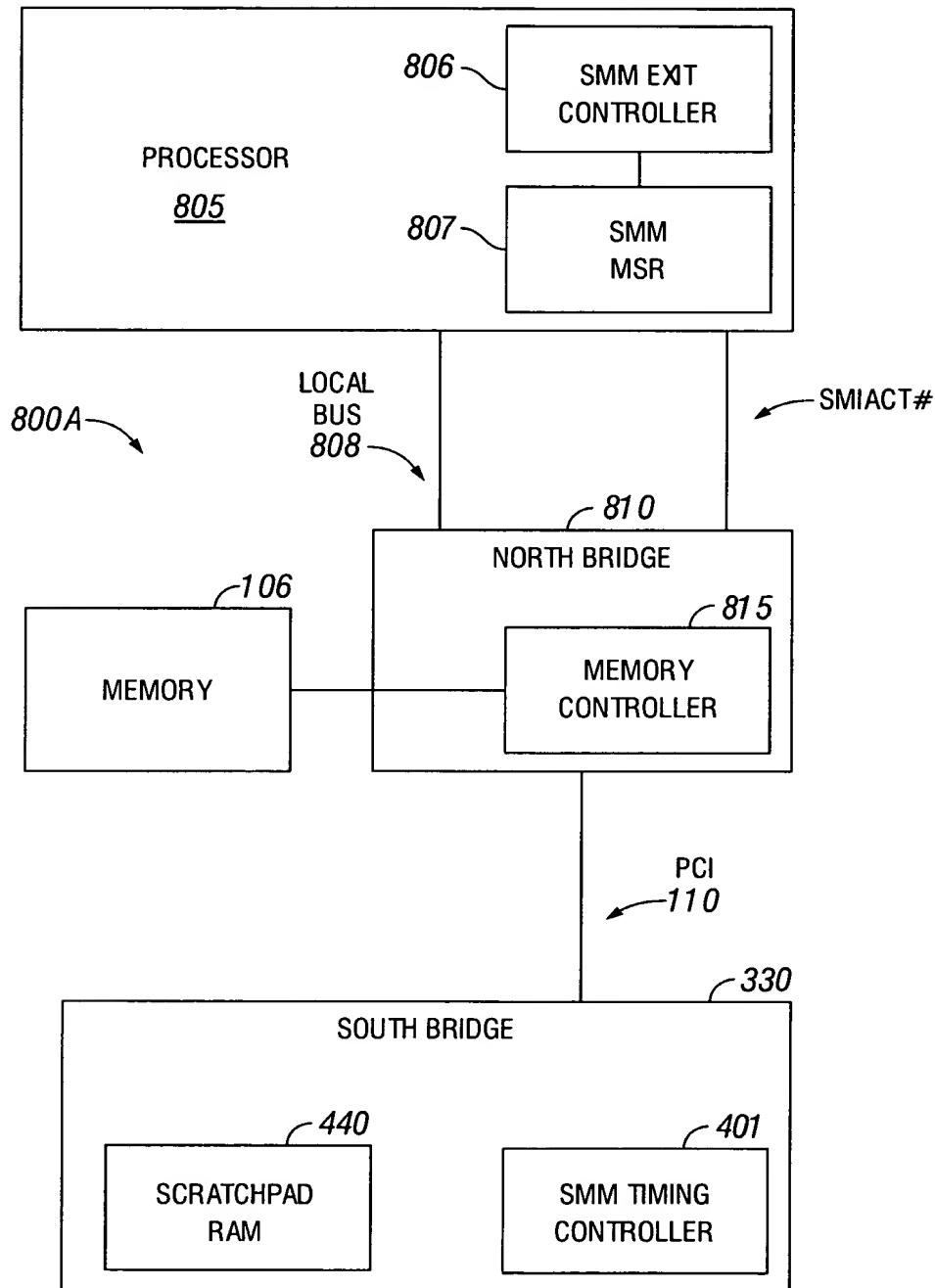


FIG. 9A

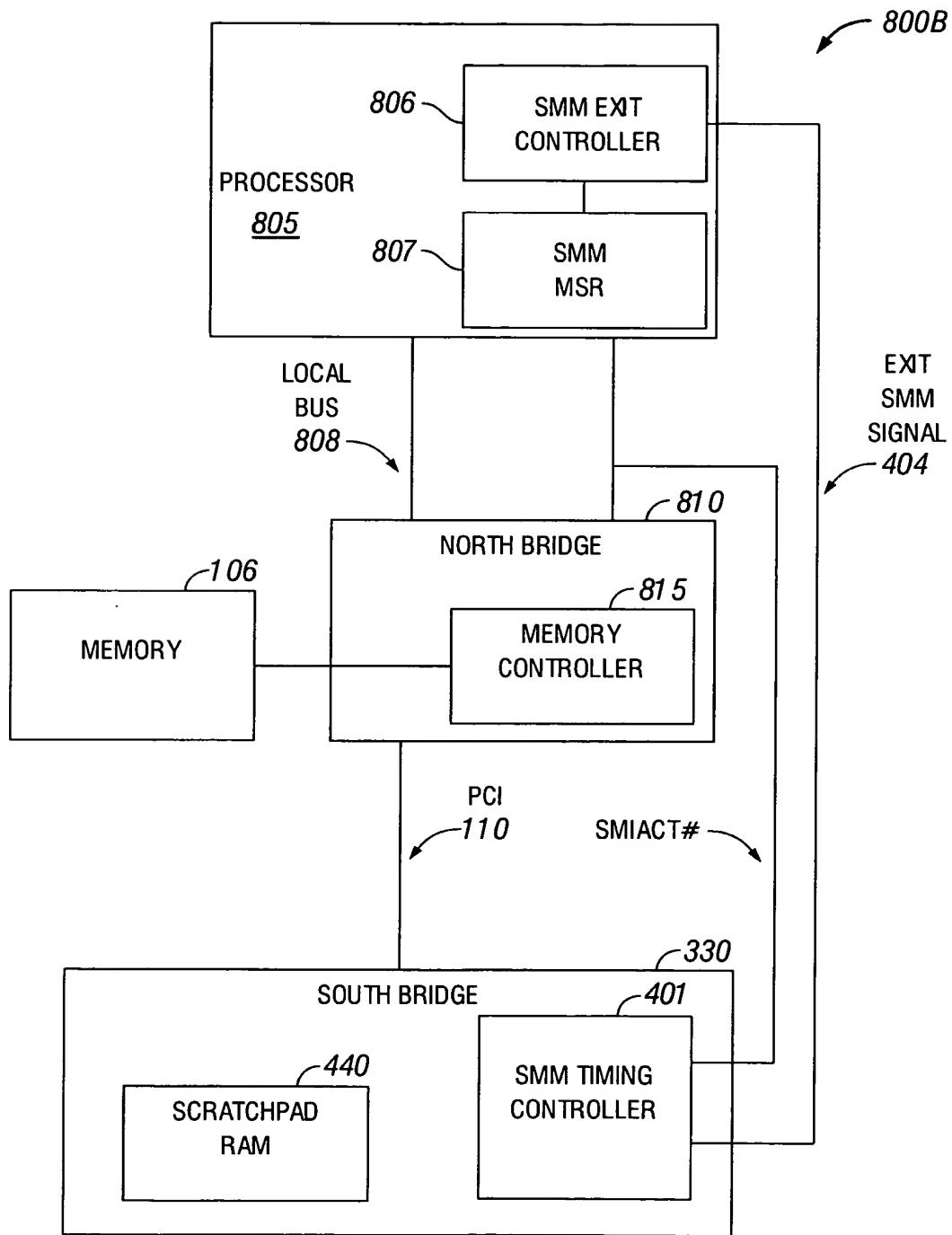
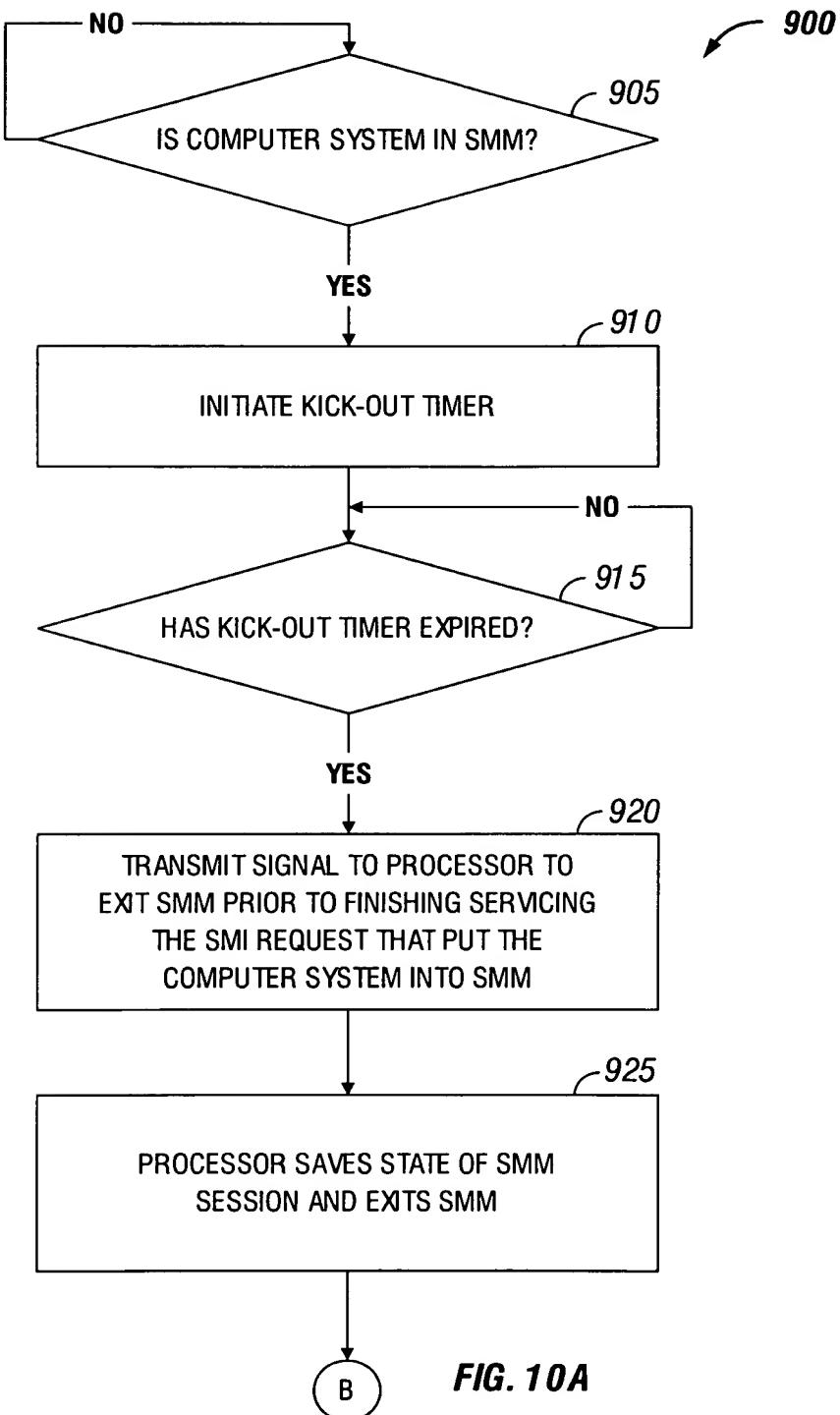
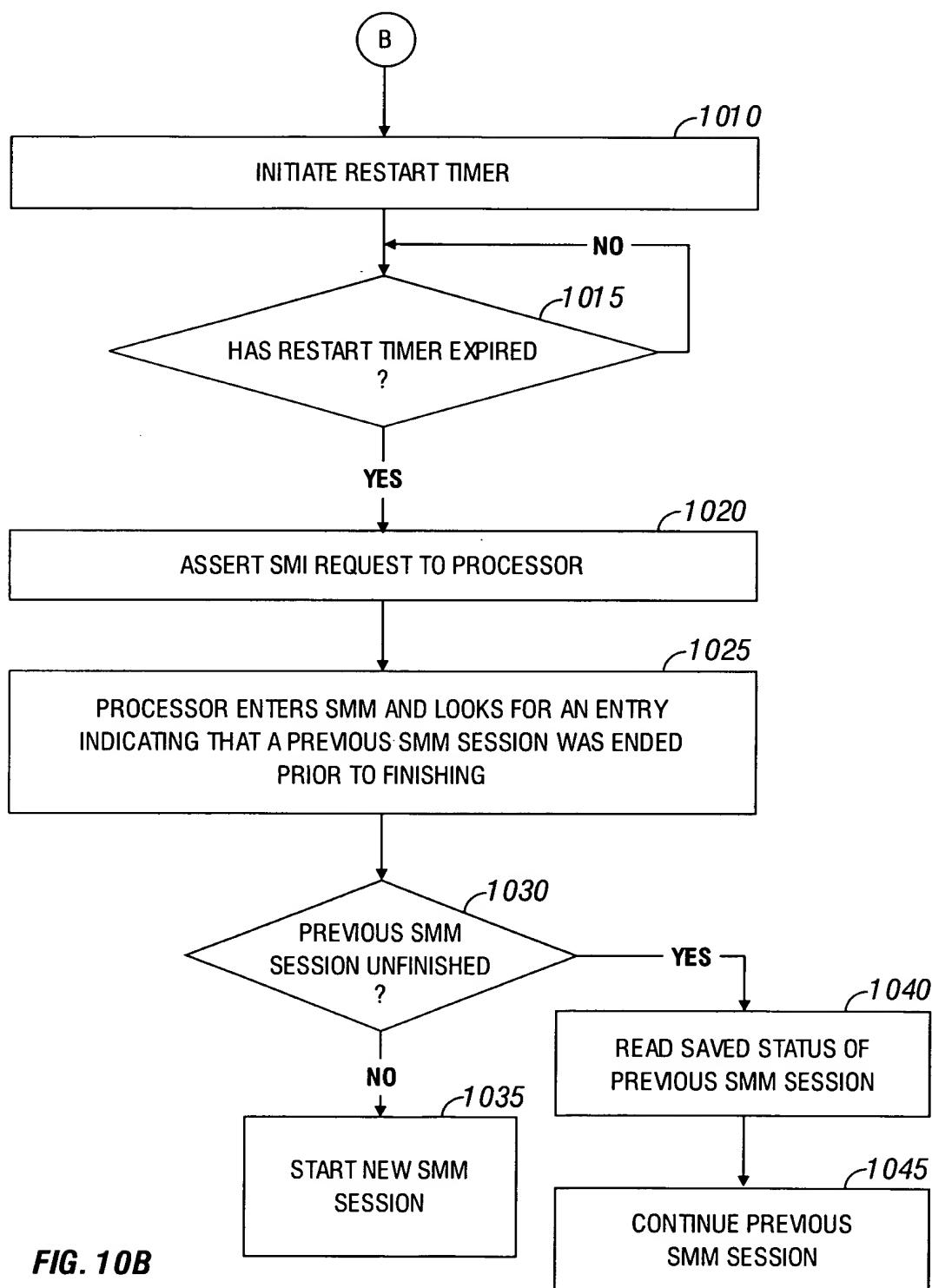
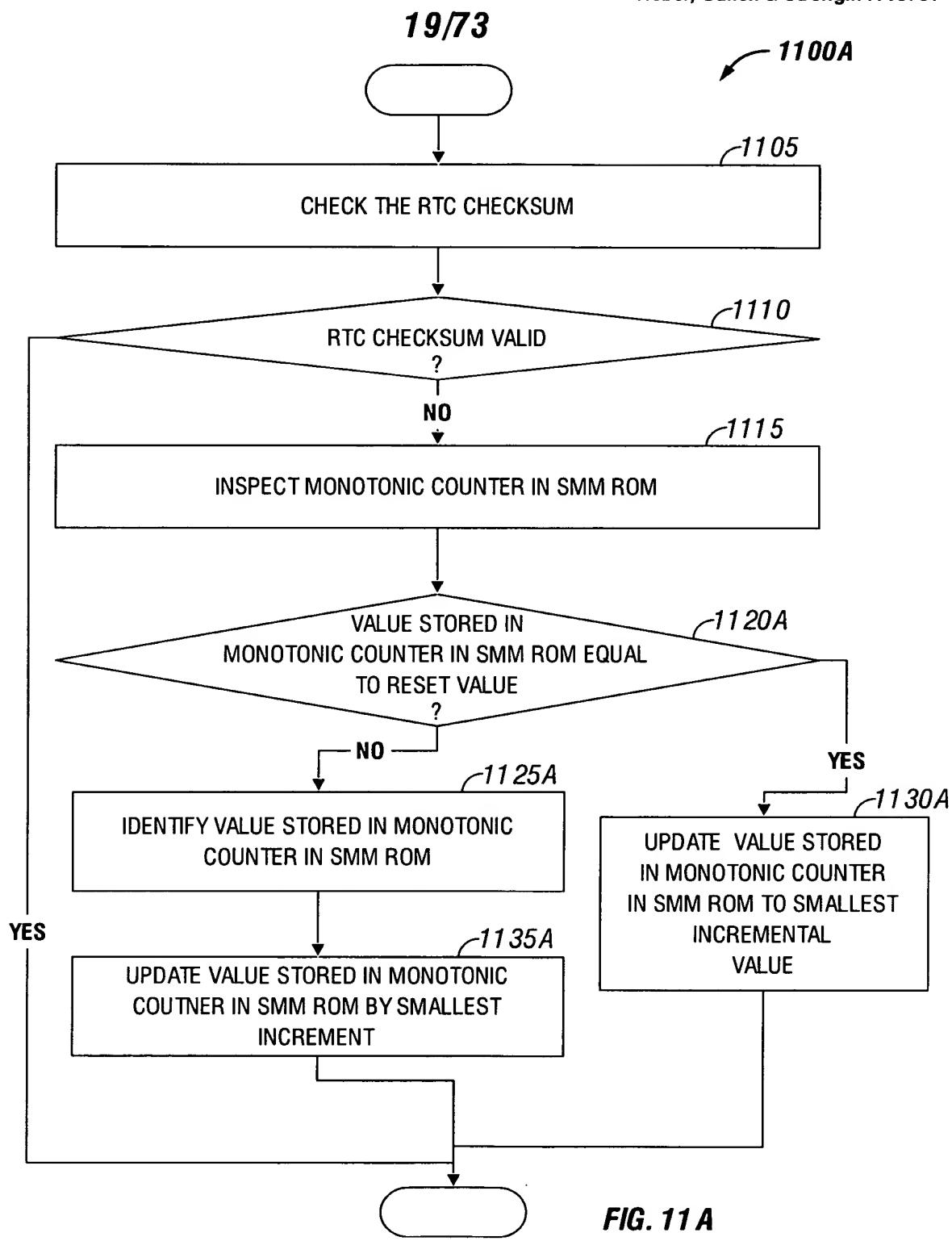
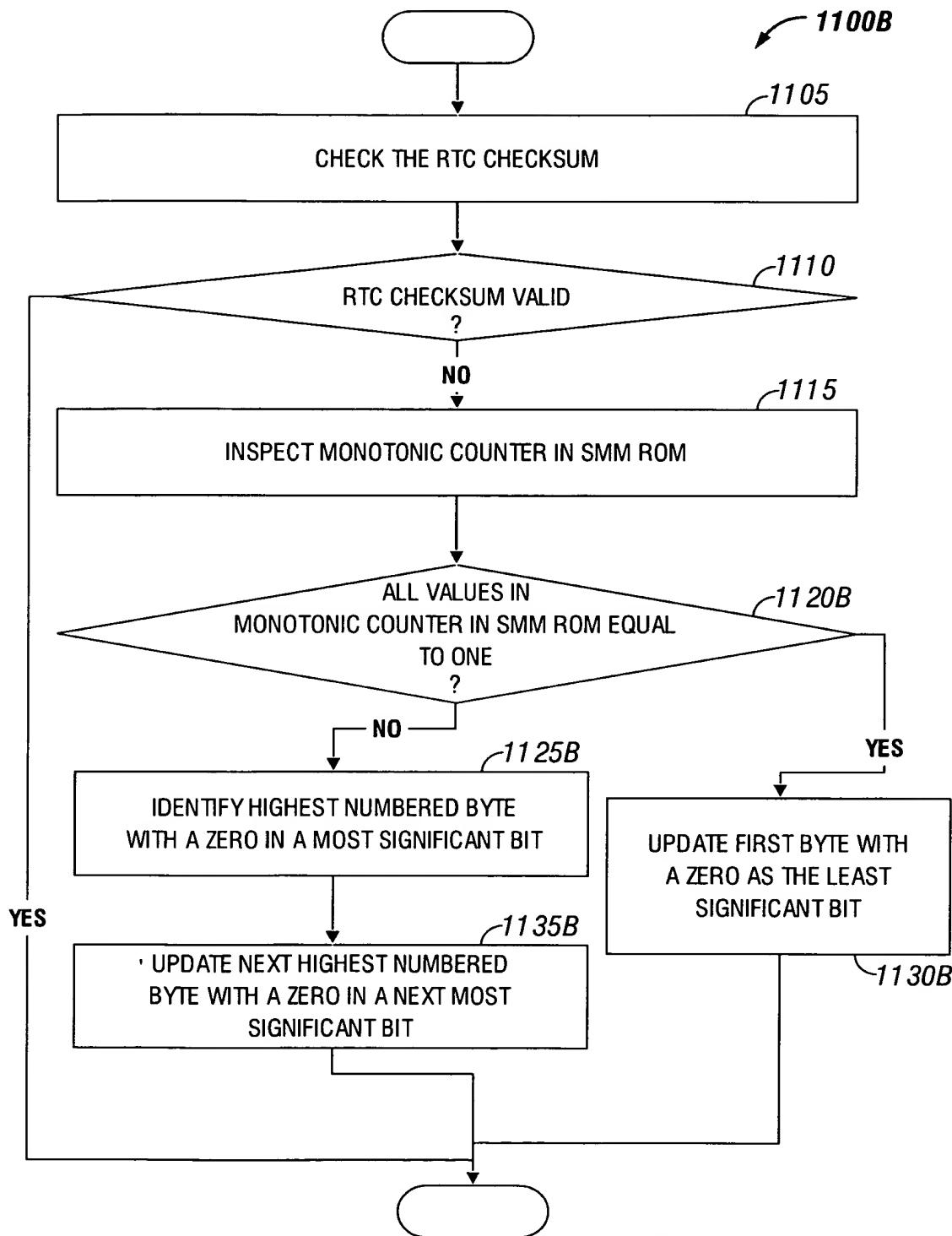


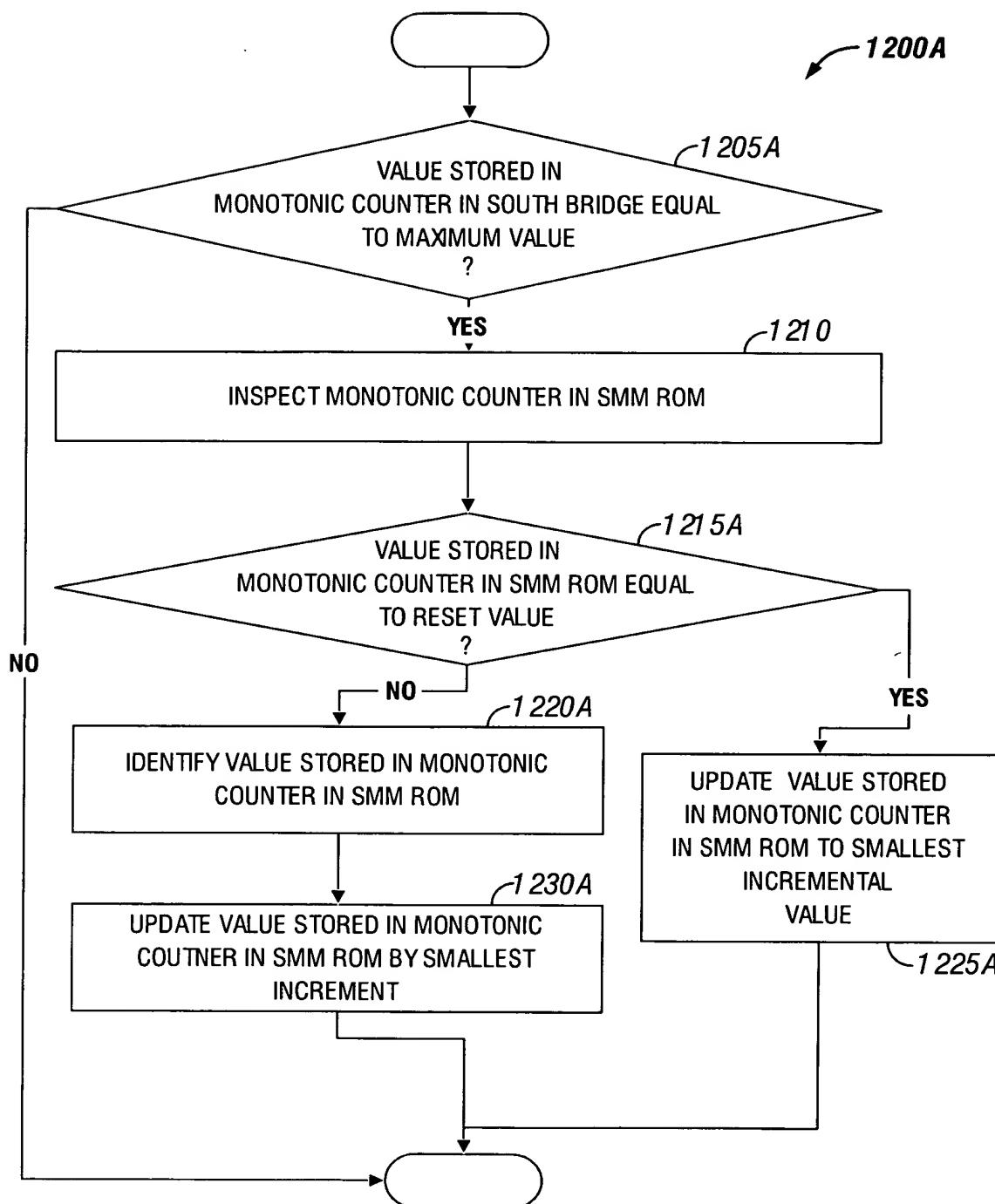
FIG. 9B

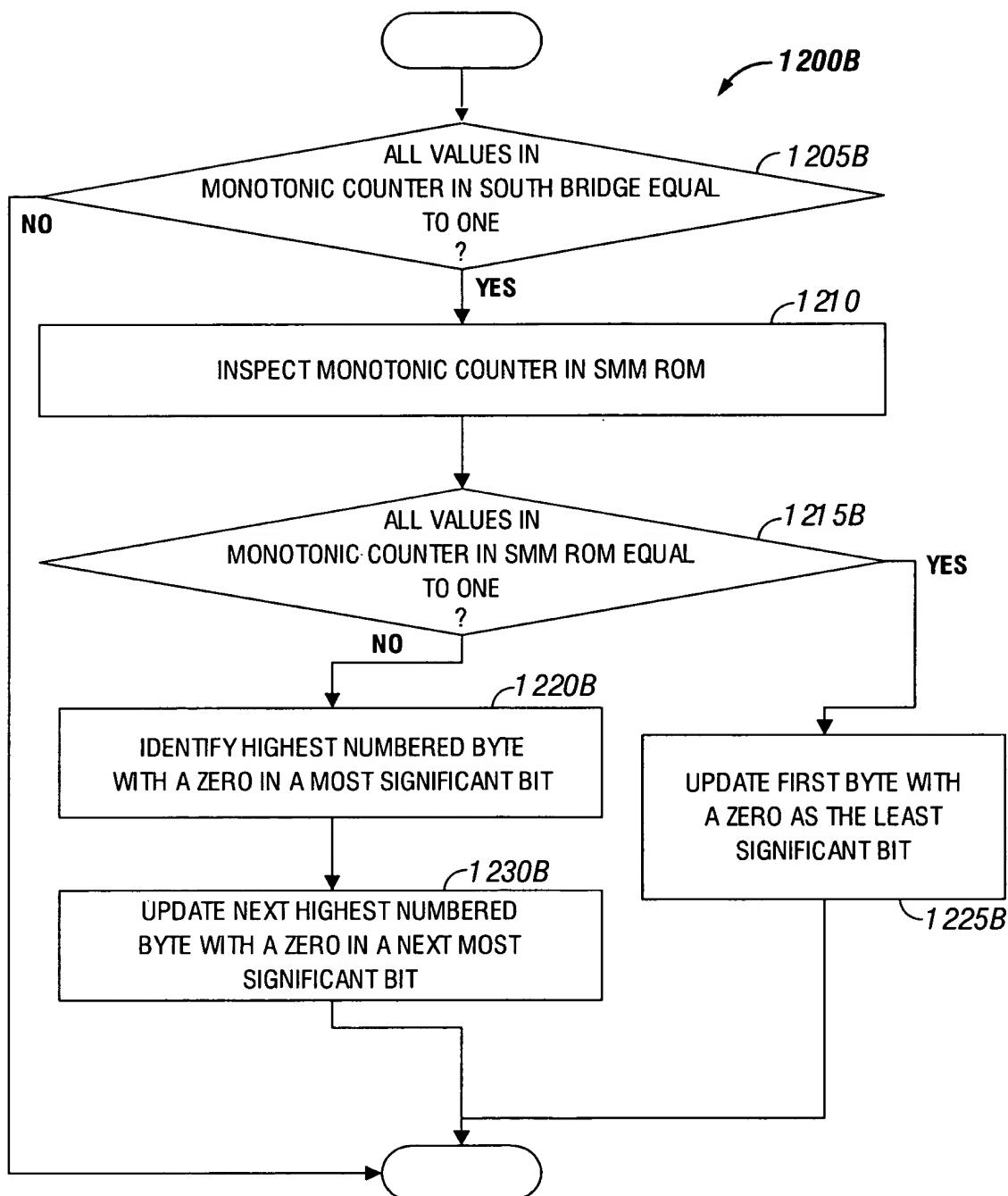
17/73**FIG. 10A**

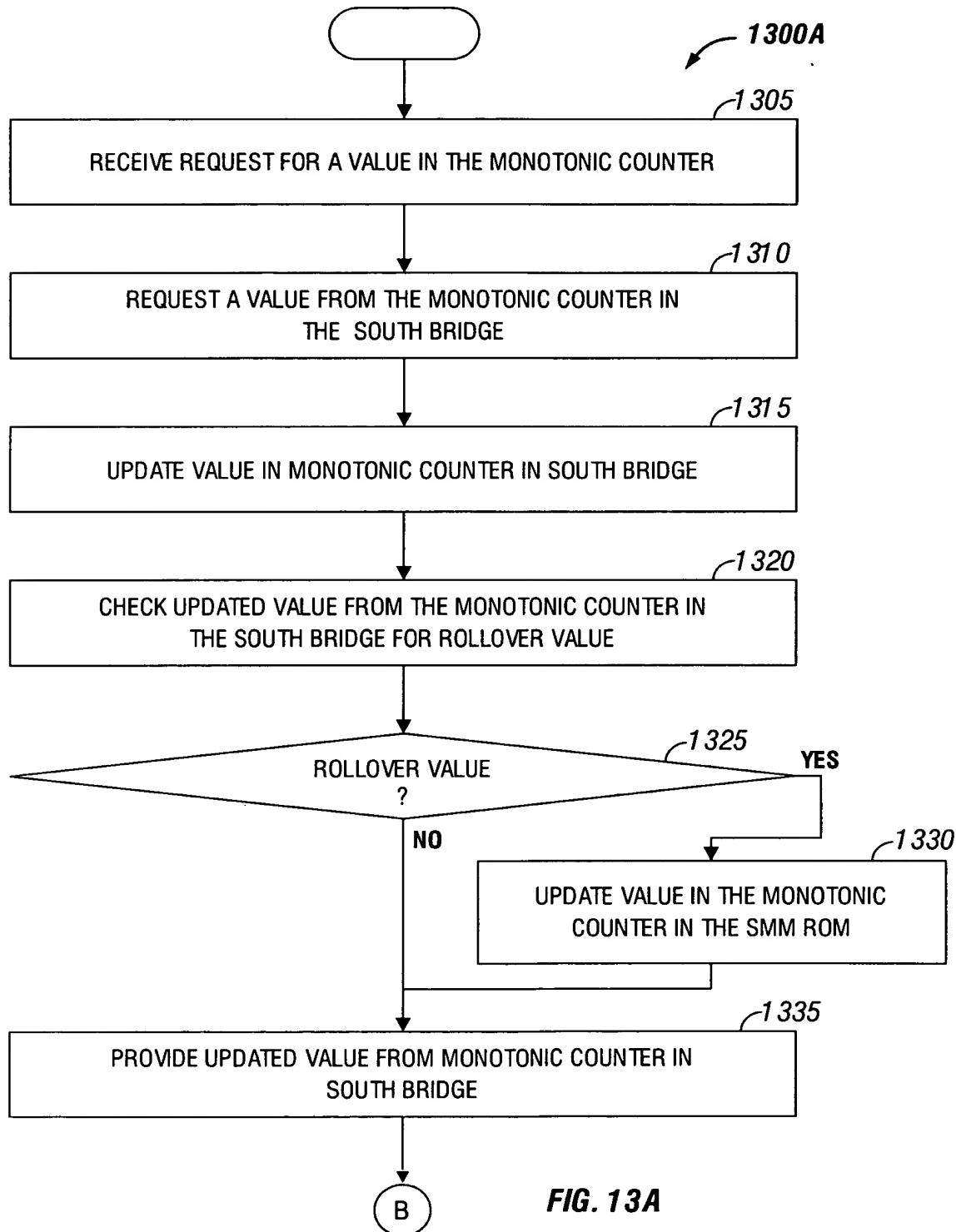
18/73**FIG. 10B**

**FIG. 11A**

20/73**FIG. 11B**

21/73**FIG. 12A**

22/73**FIG. 12B**

23/73**FIG. 13A**

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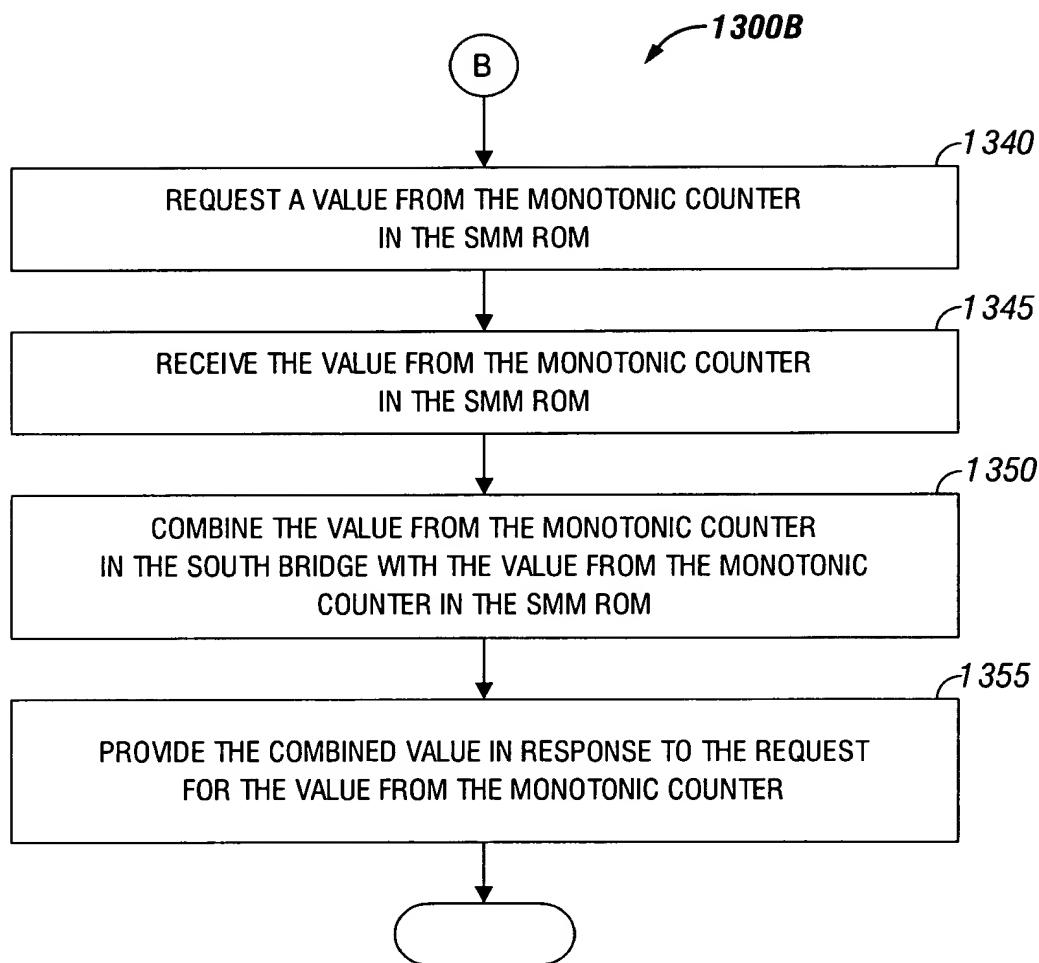


FIG. 13B

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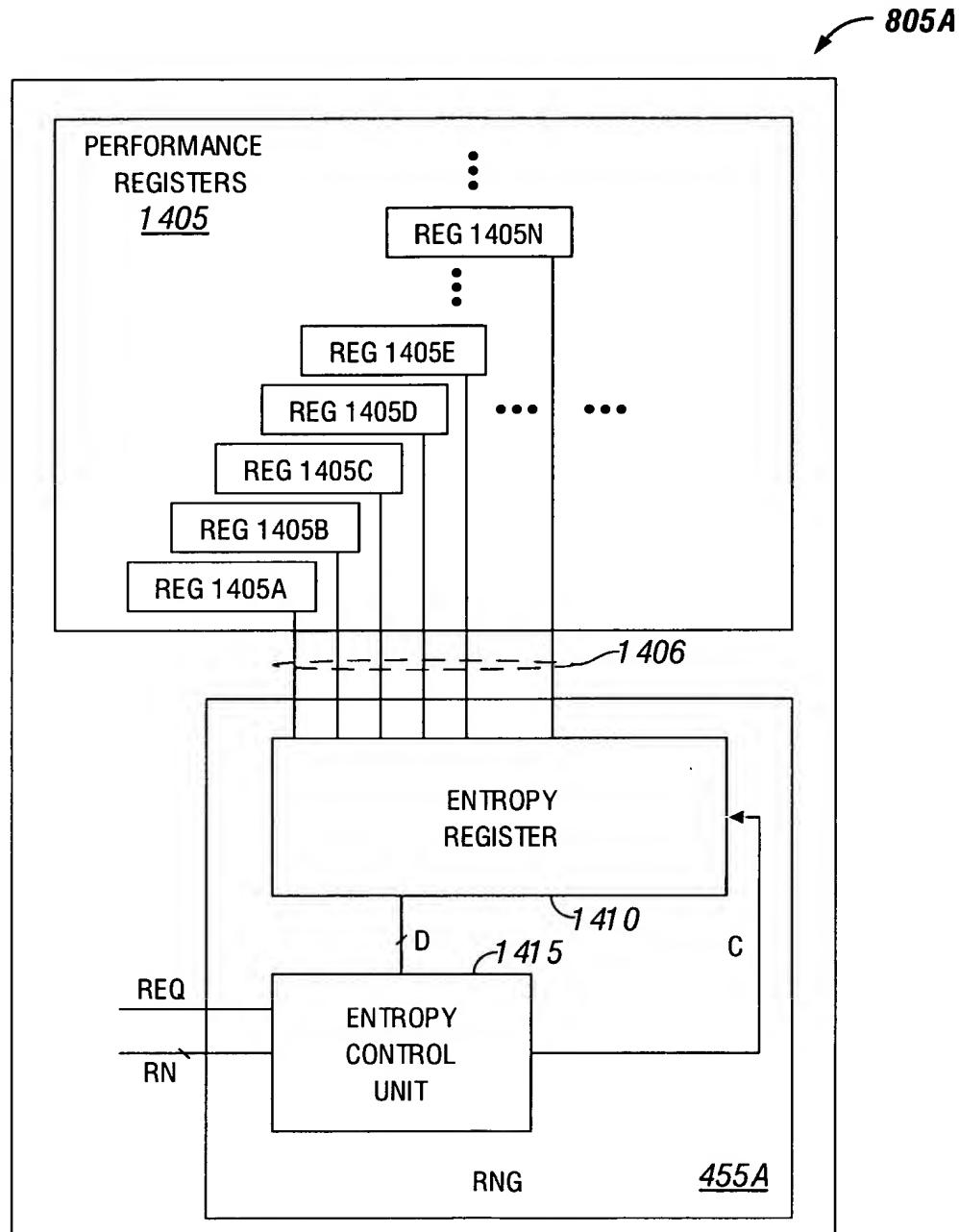


FIG. 14A

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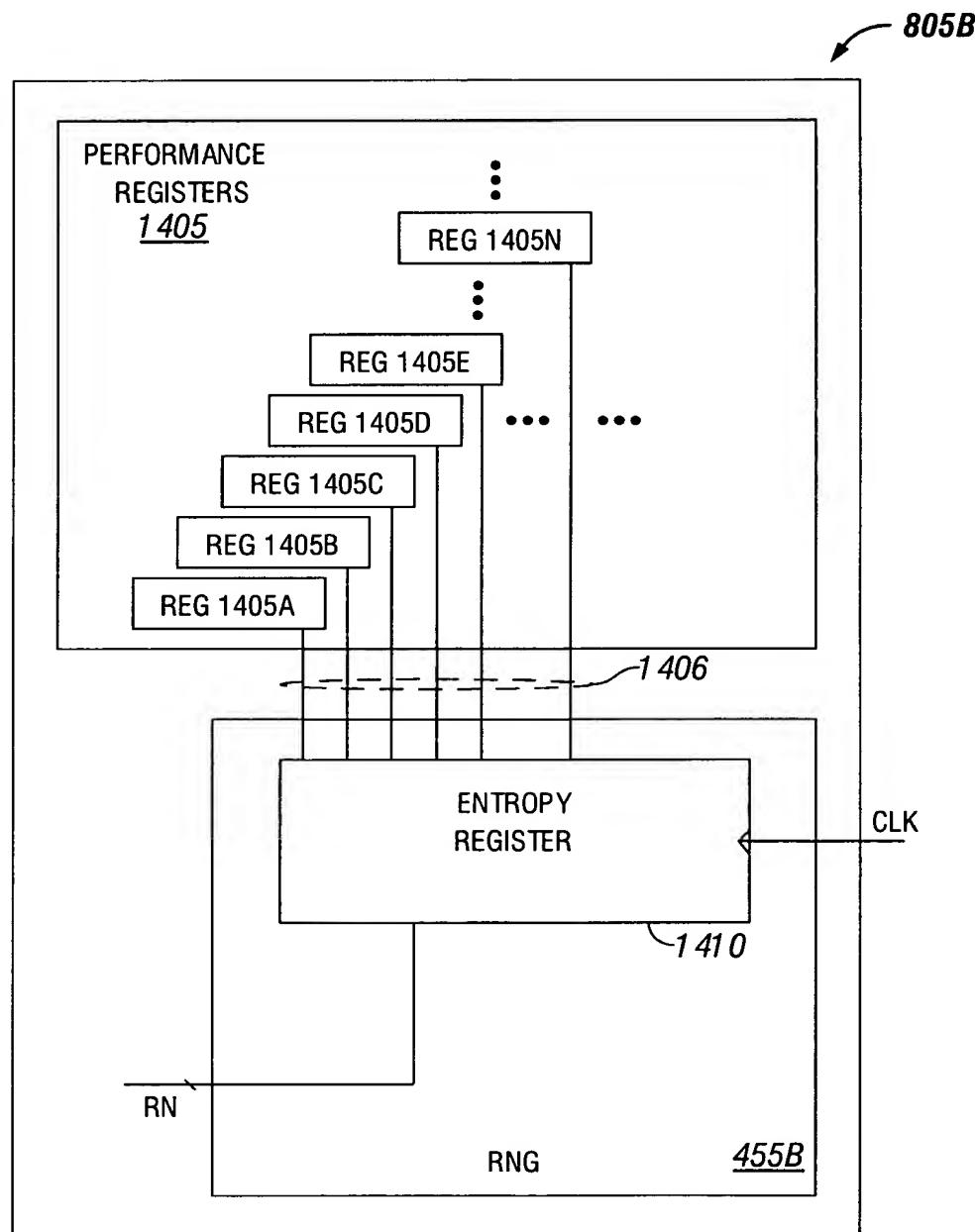
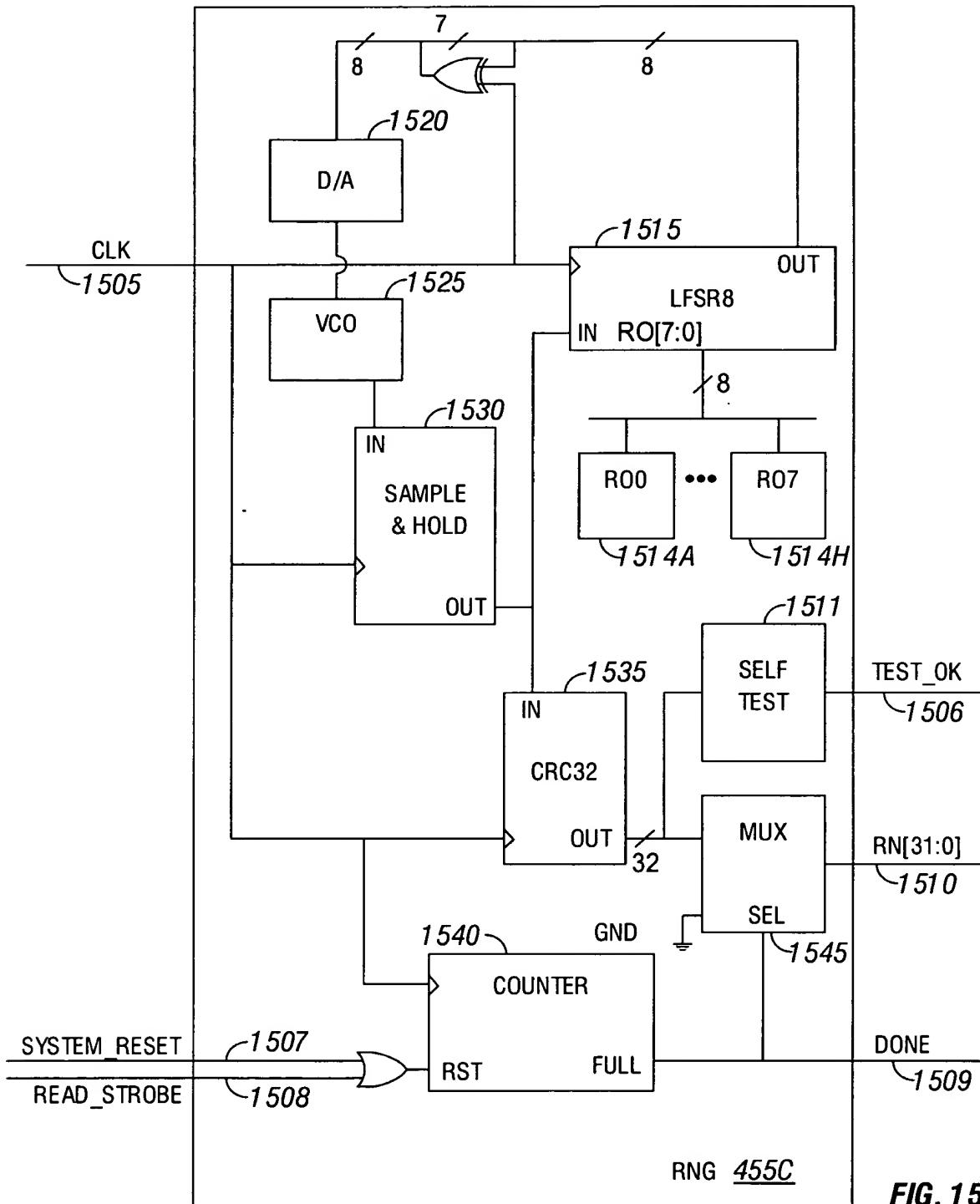


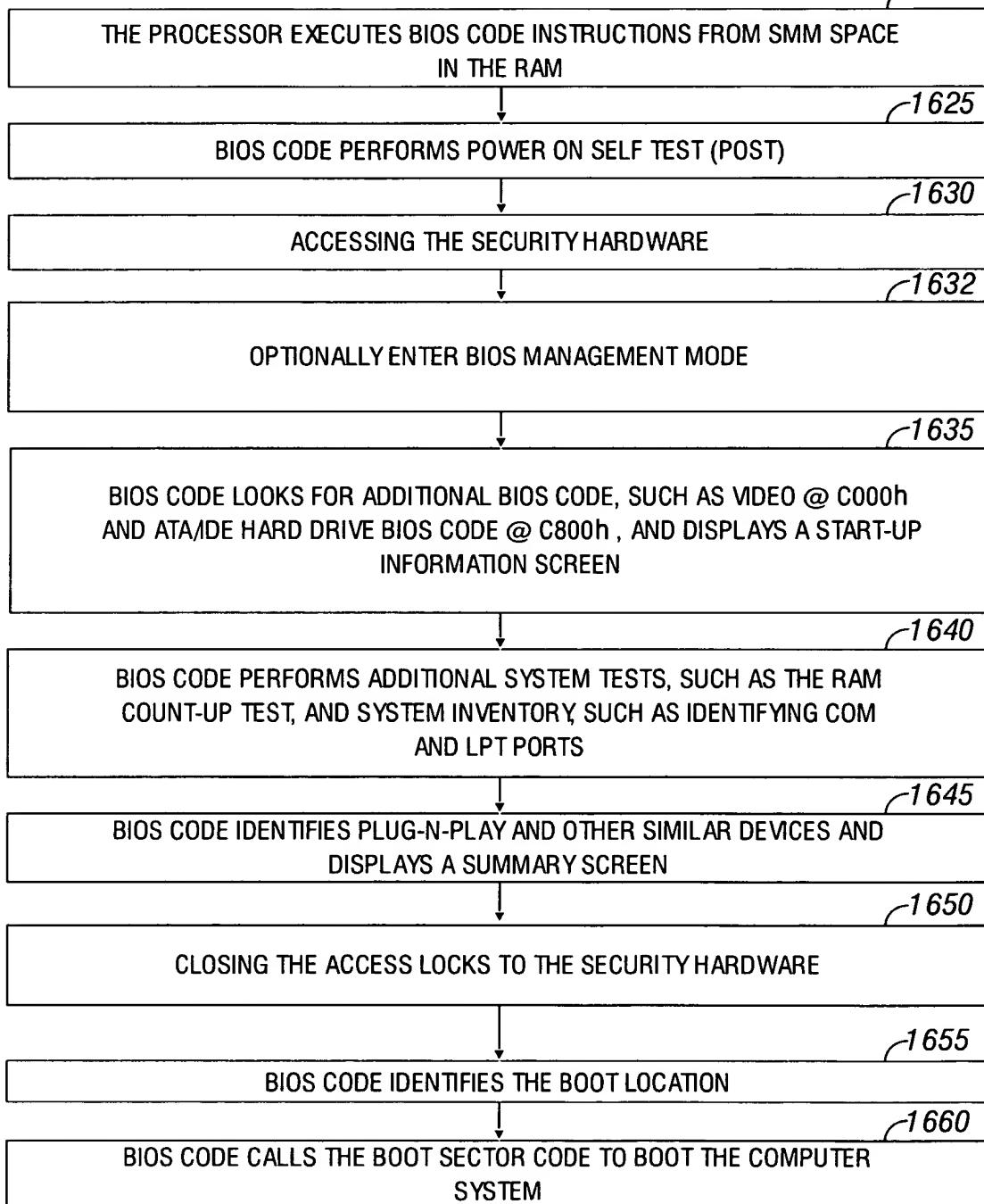
FIG. 14B

27/73**FIG. 15**

28/73

1600A

1620

**FIG. 16A**

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1600B
1615

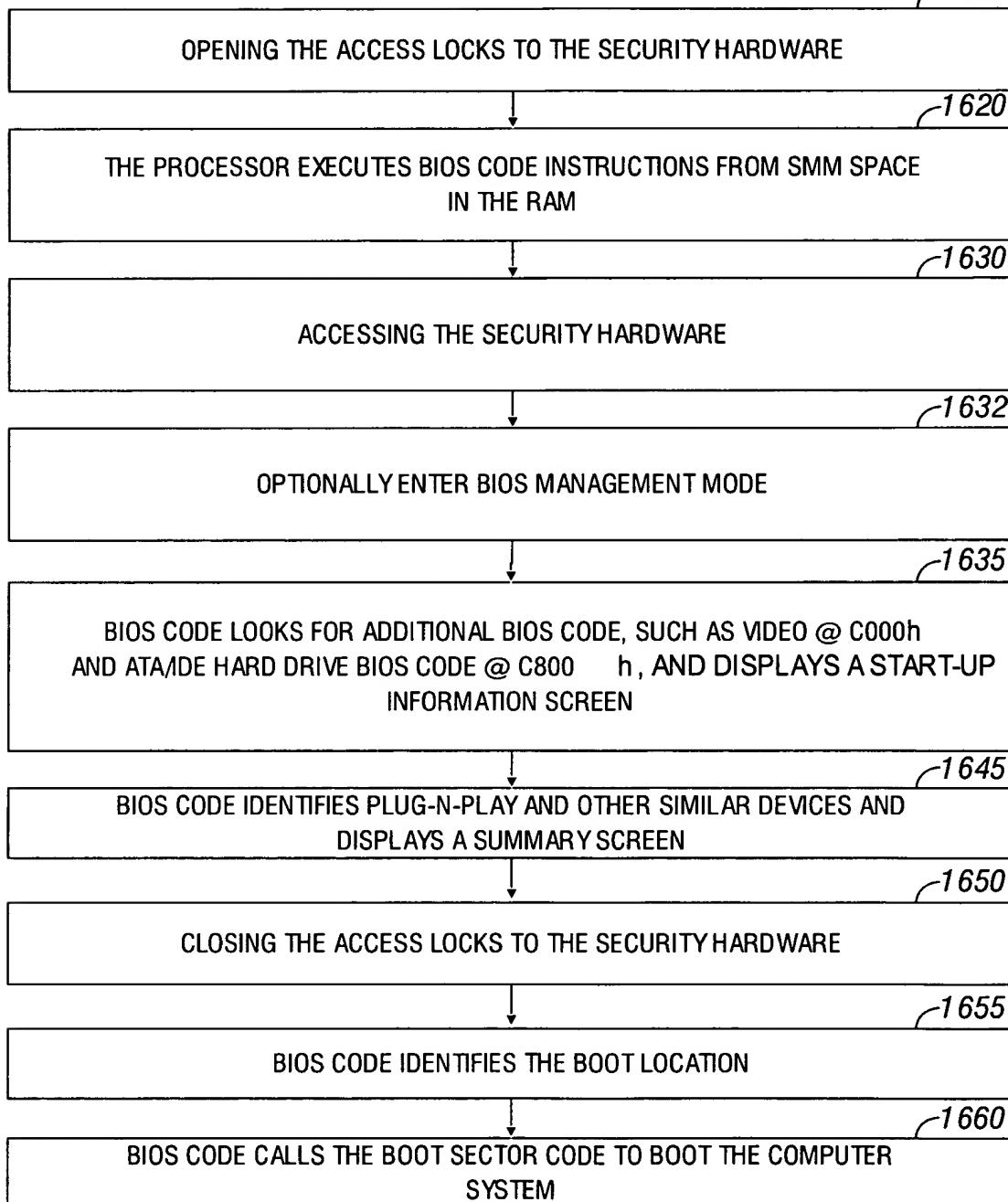
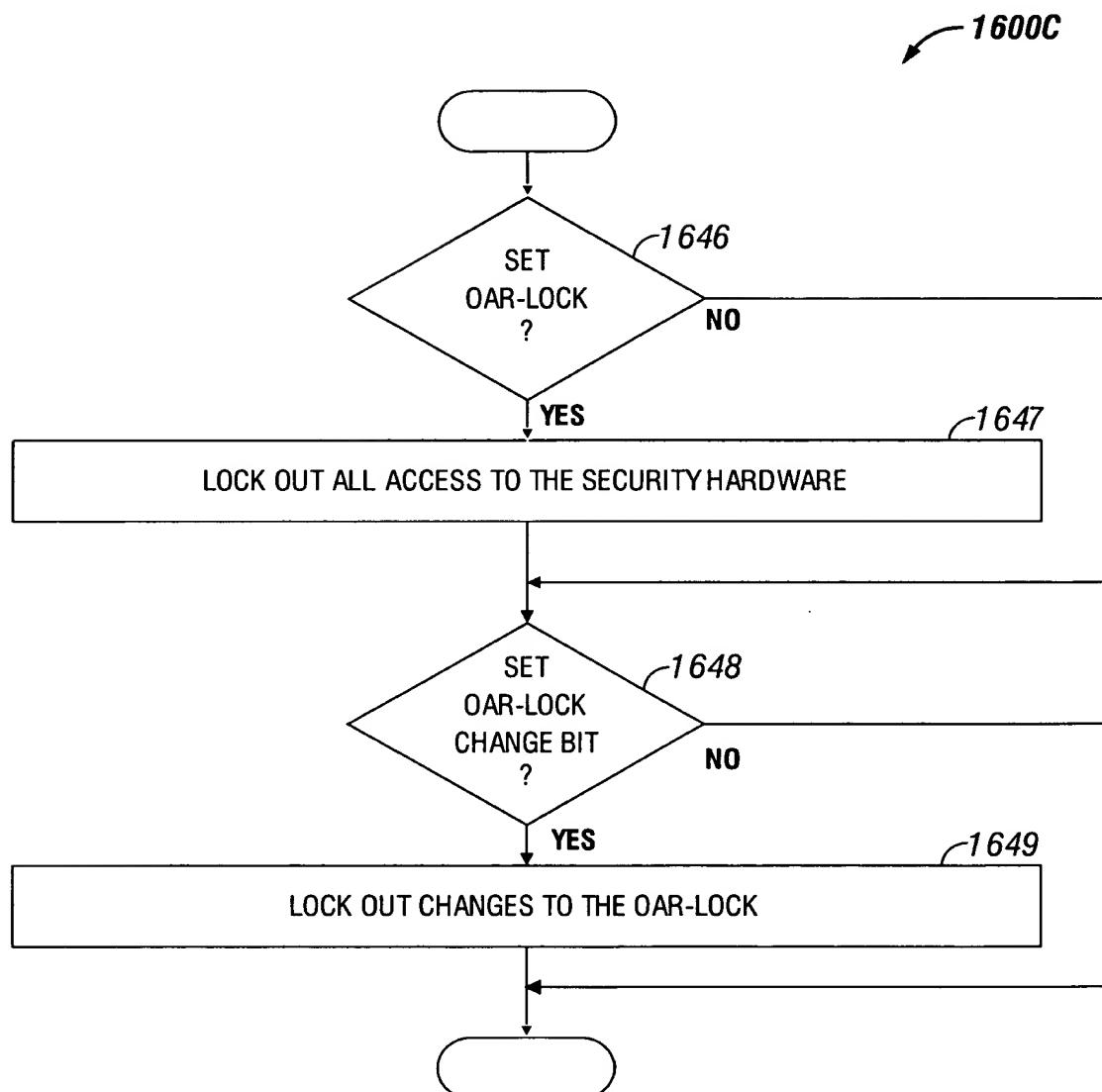
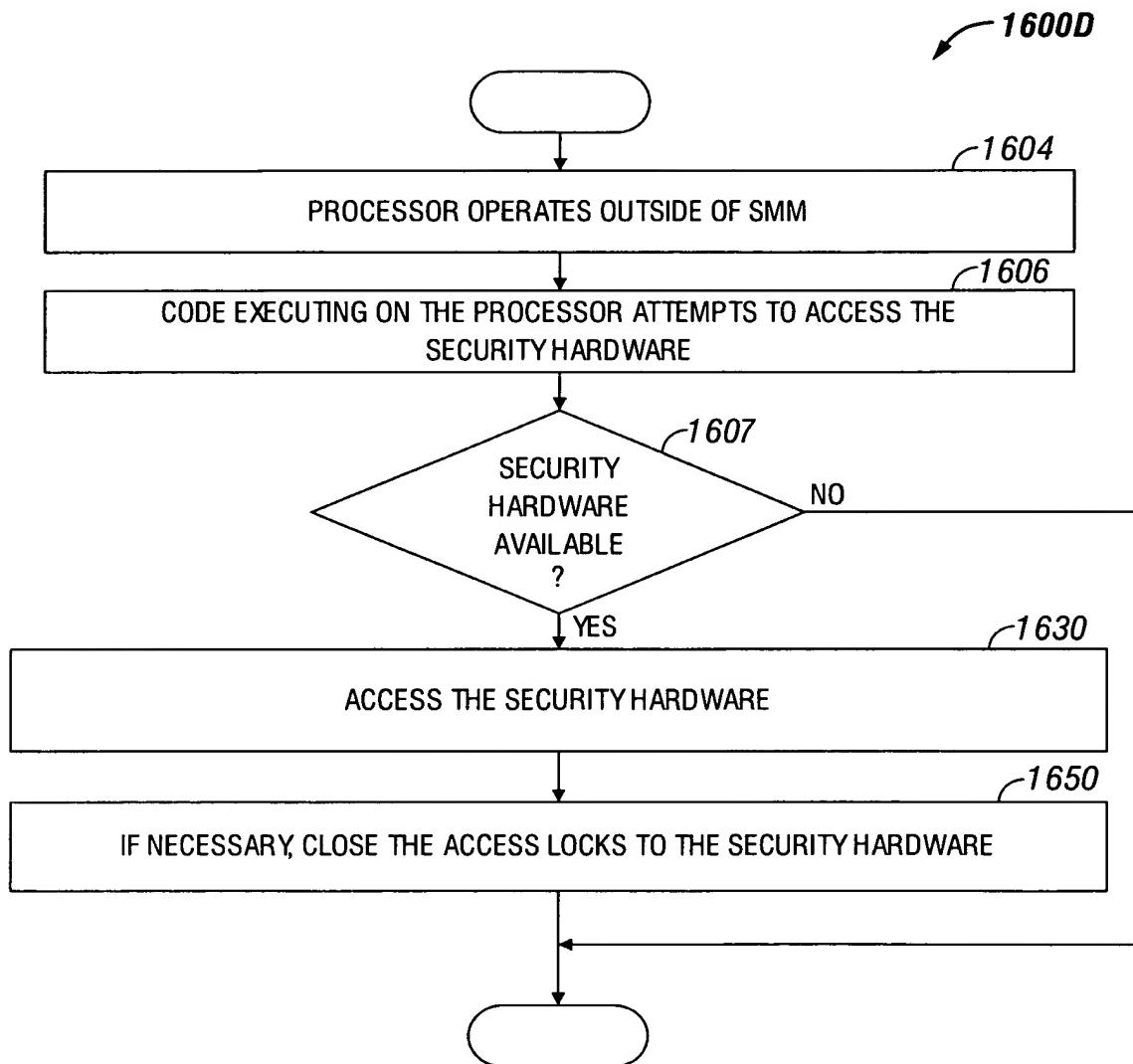
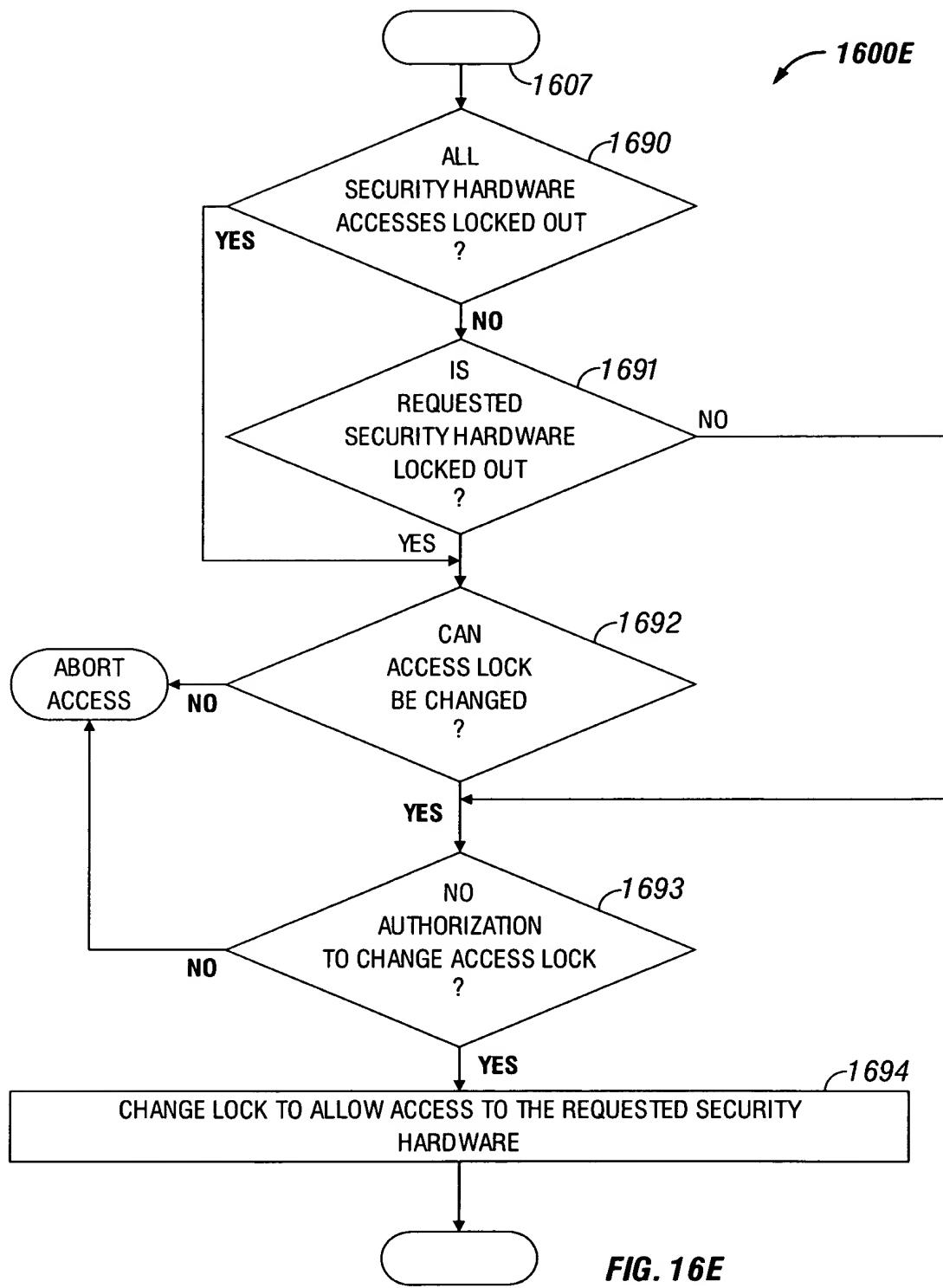


FIG. 16B

30/73**Fig. 16C**

31/73**FIG. 16D**

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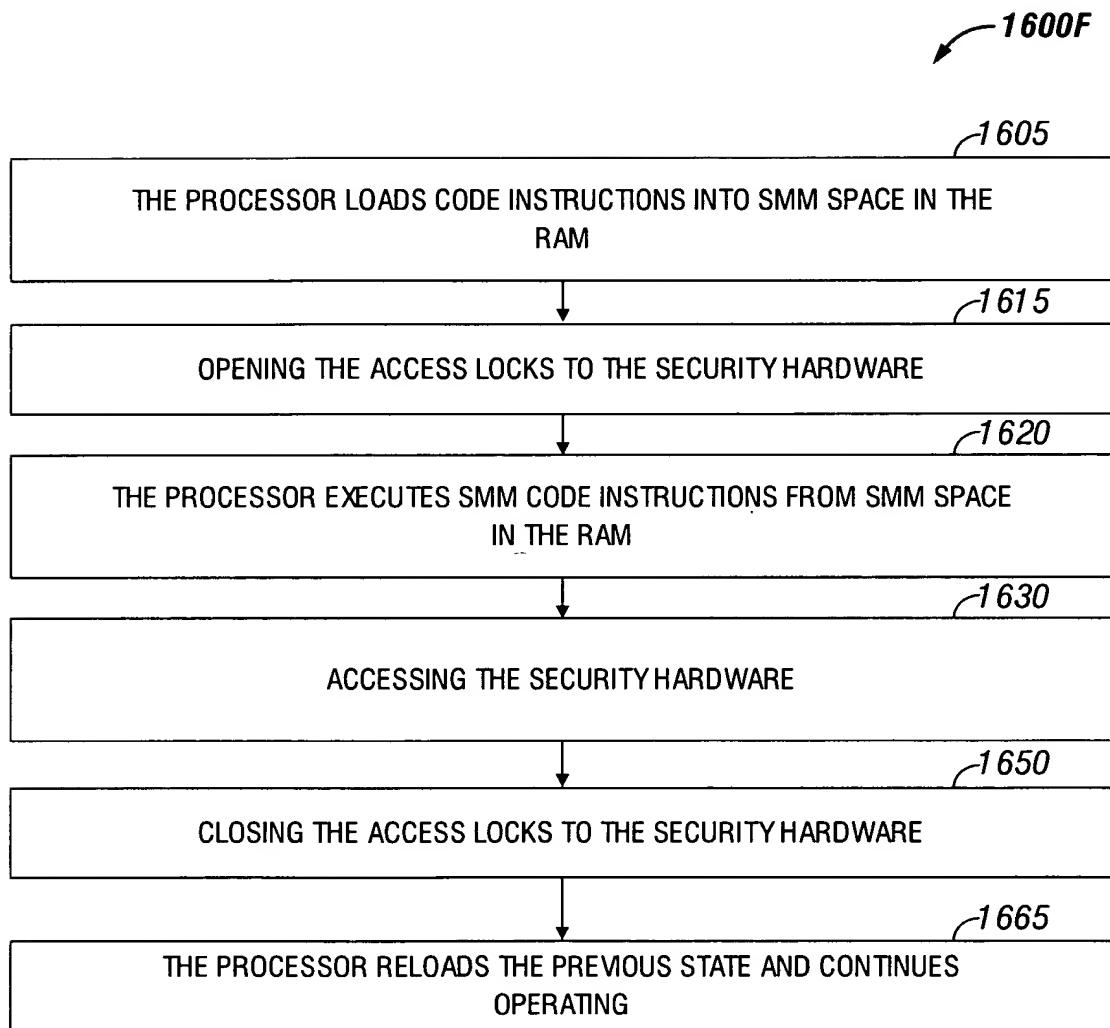
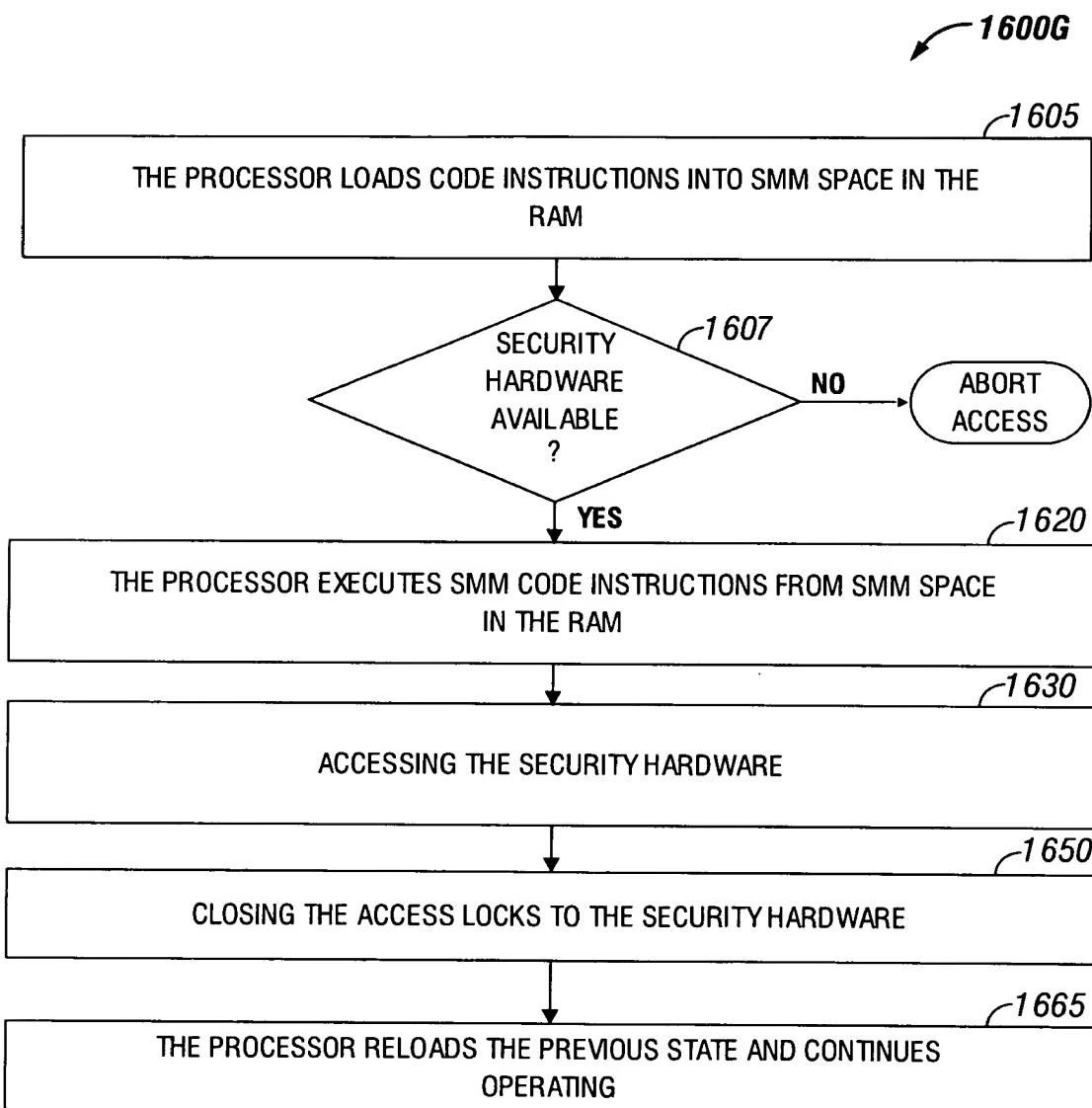
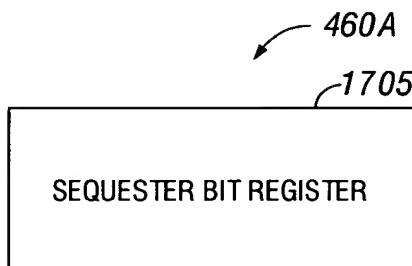
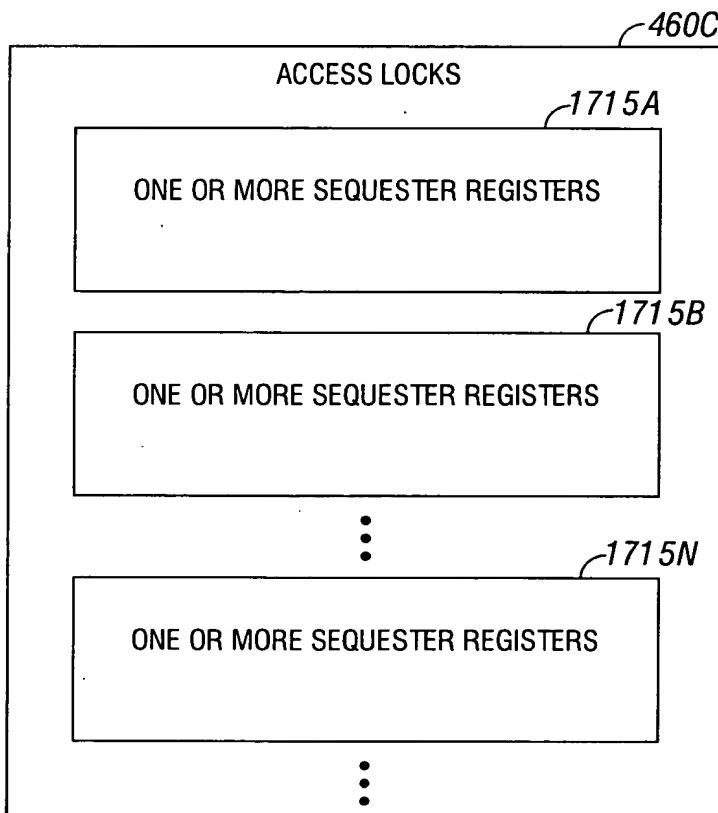
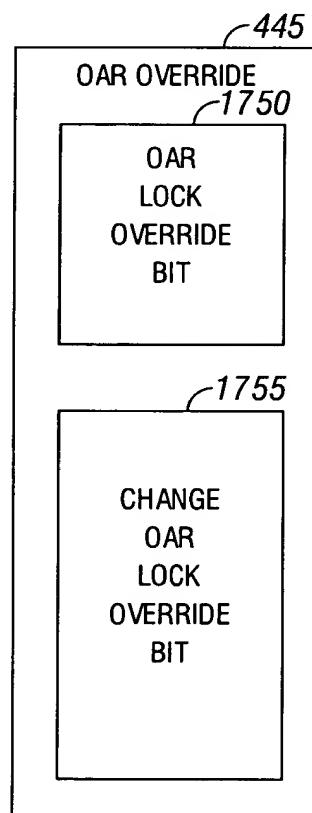


FIG. 16F

34/73**FIG. 16G**

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**FIG. 17A****FIG. 17B****FIG. 17C****FIG. 17D**

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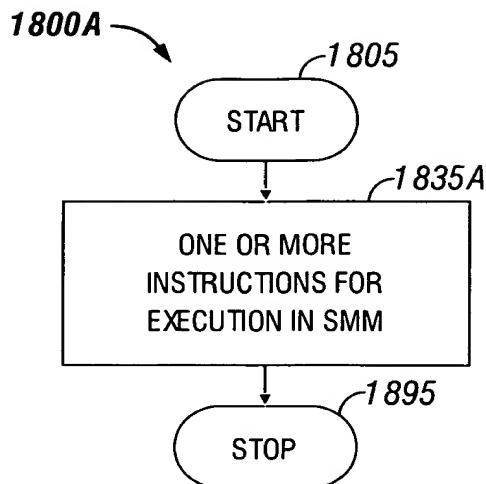


FIG. 18A
(Prior Art)

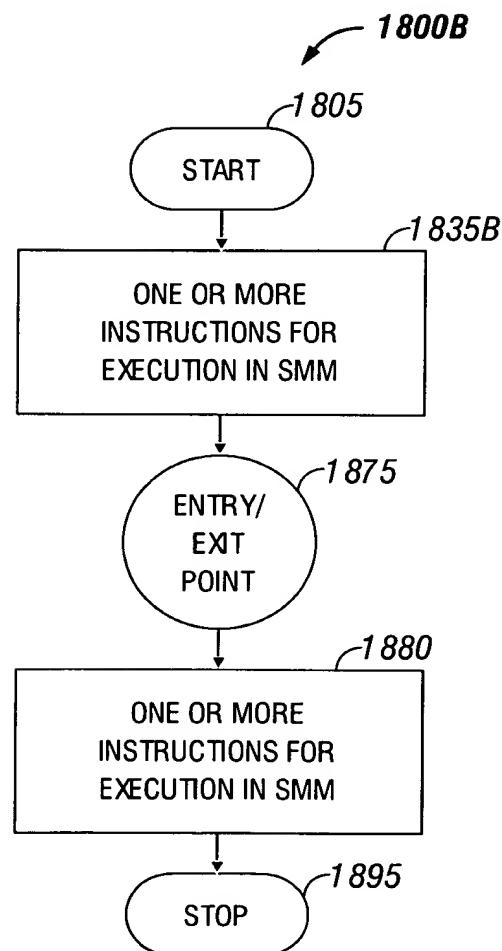
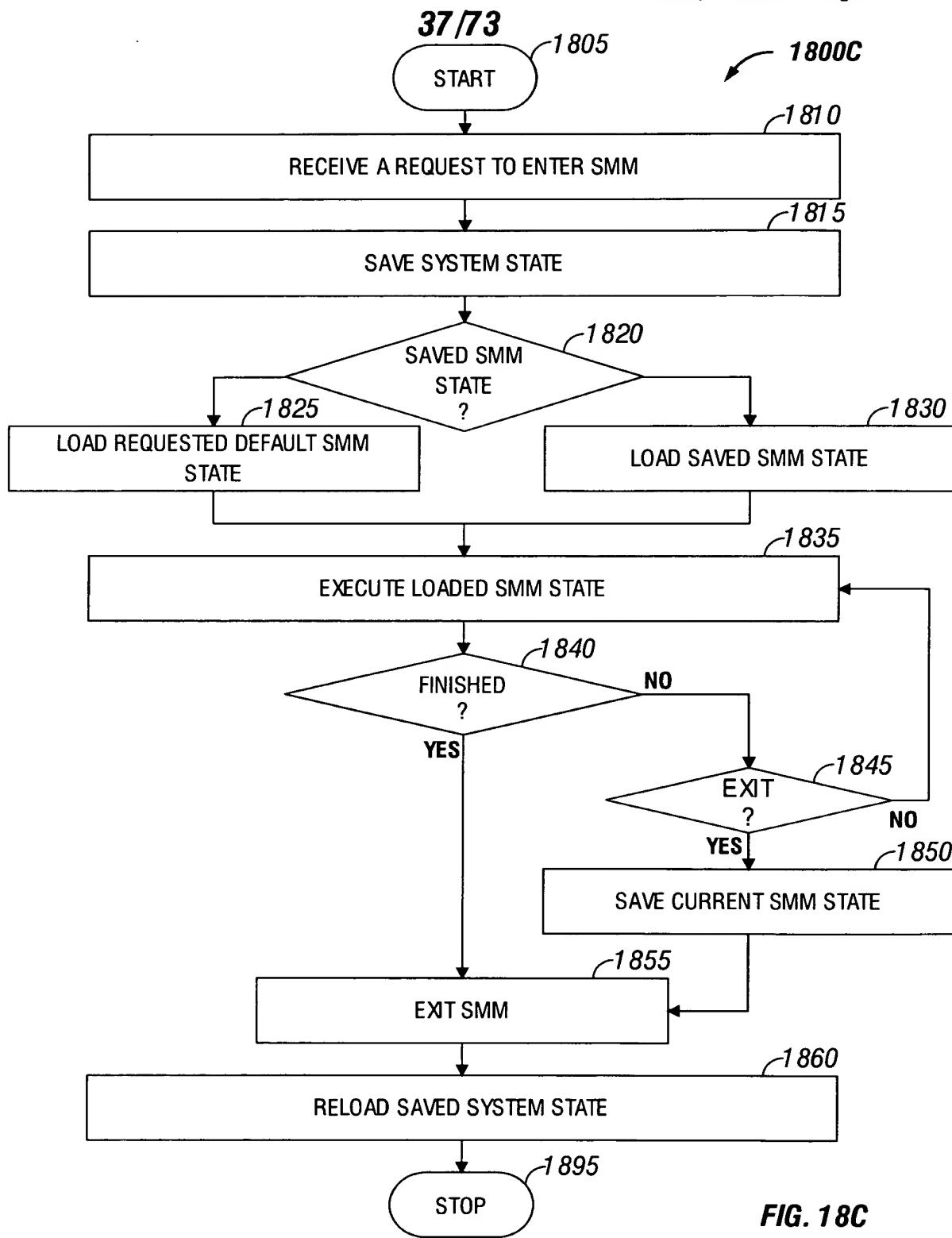
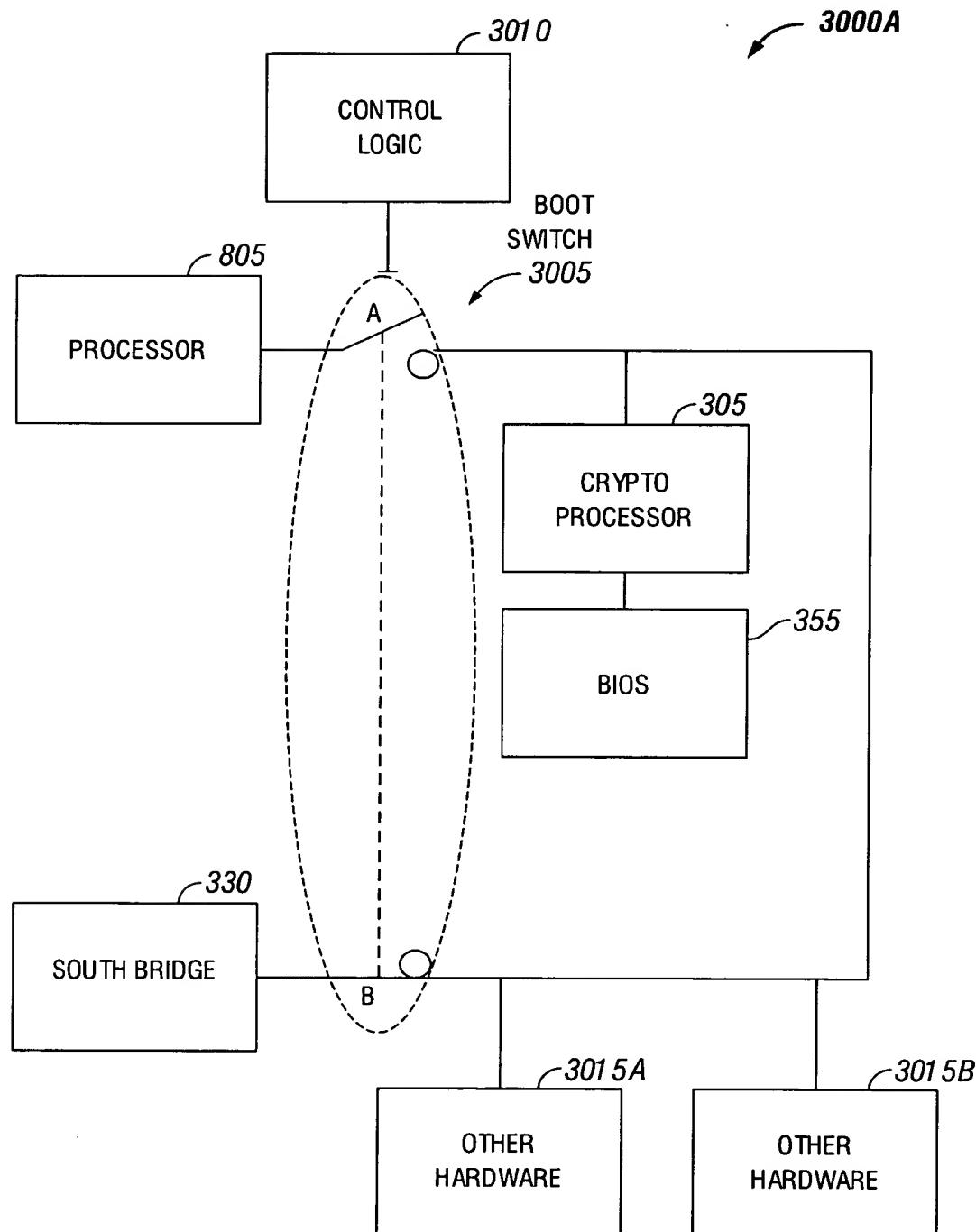
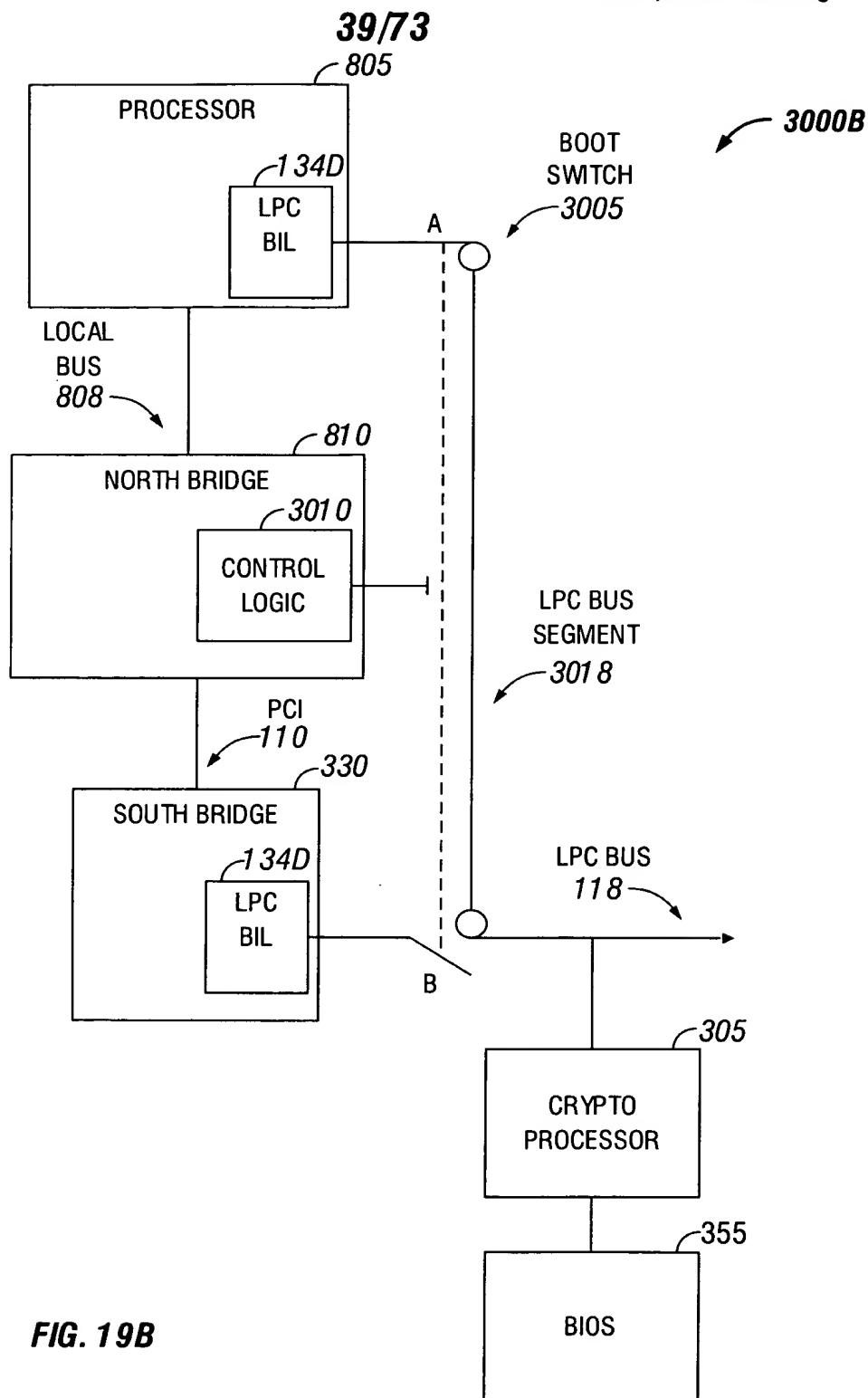


FIG. 18B



38/73**FIG. 19A**

**FIG. 19B**

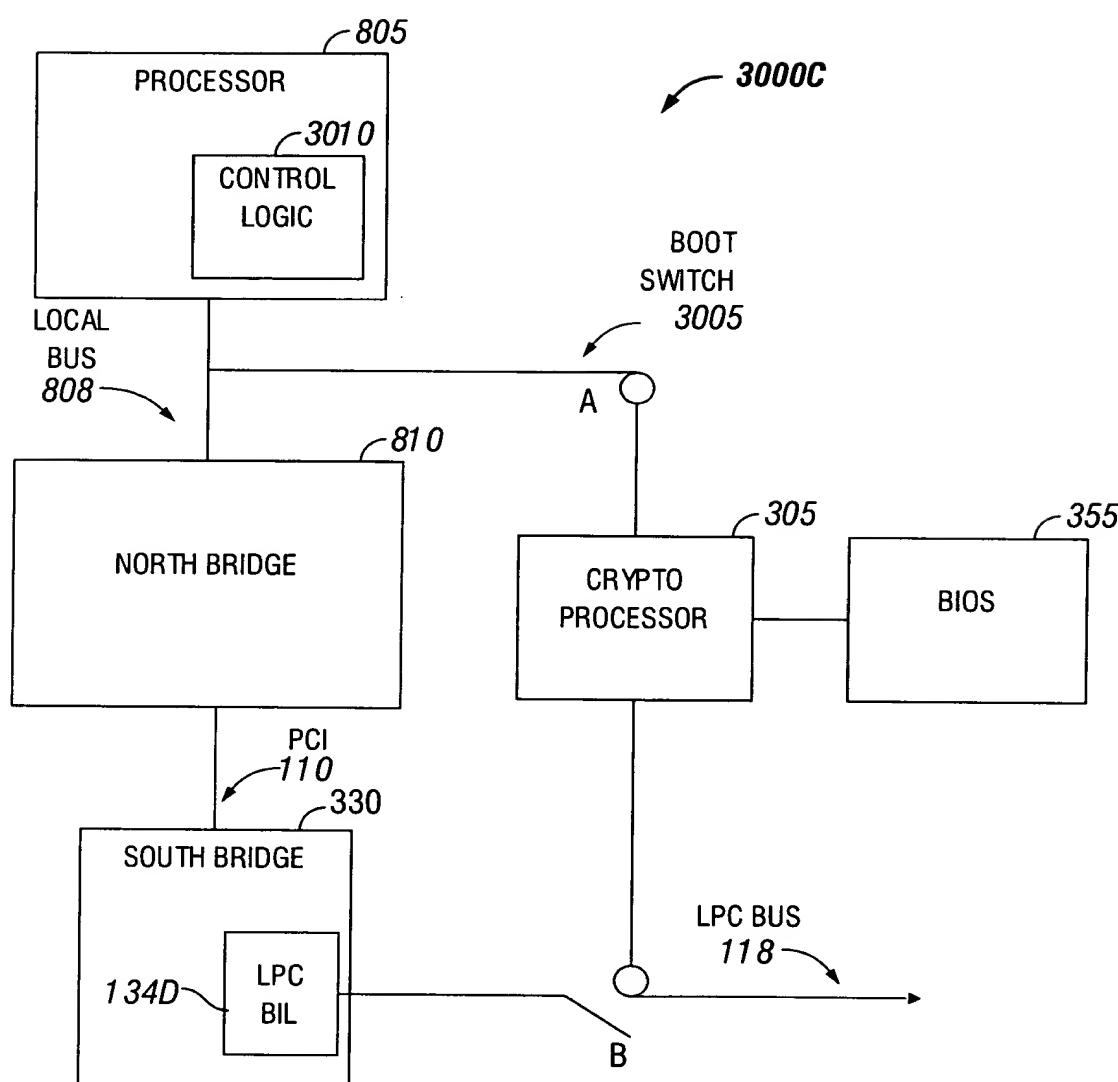


FIG. 19C

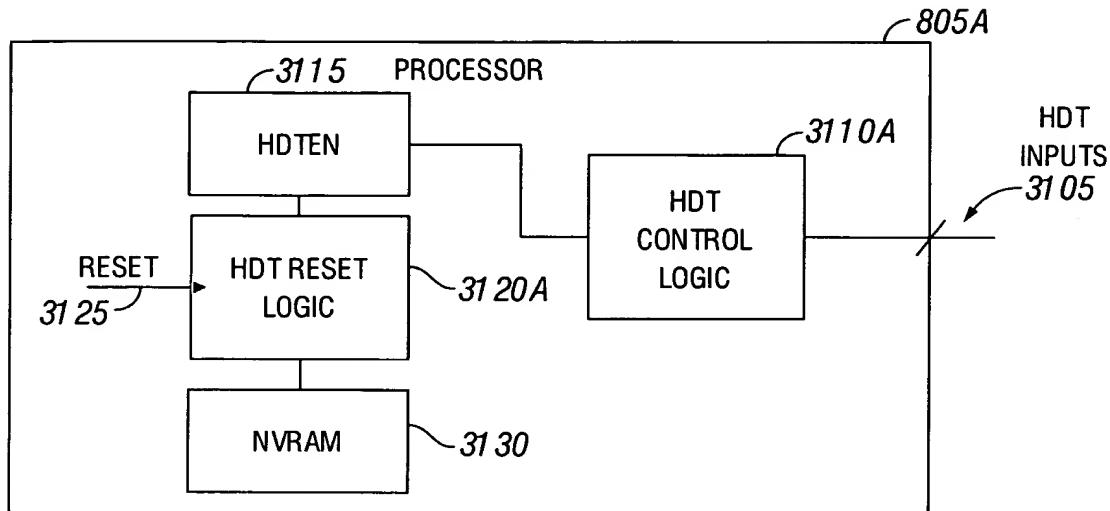


FIG. 20A

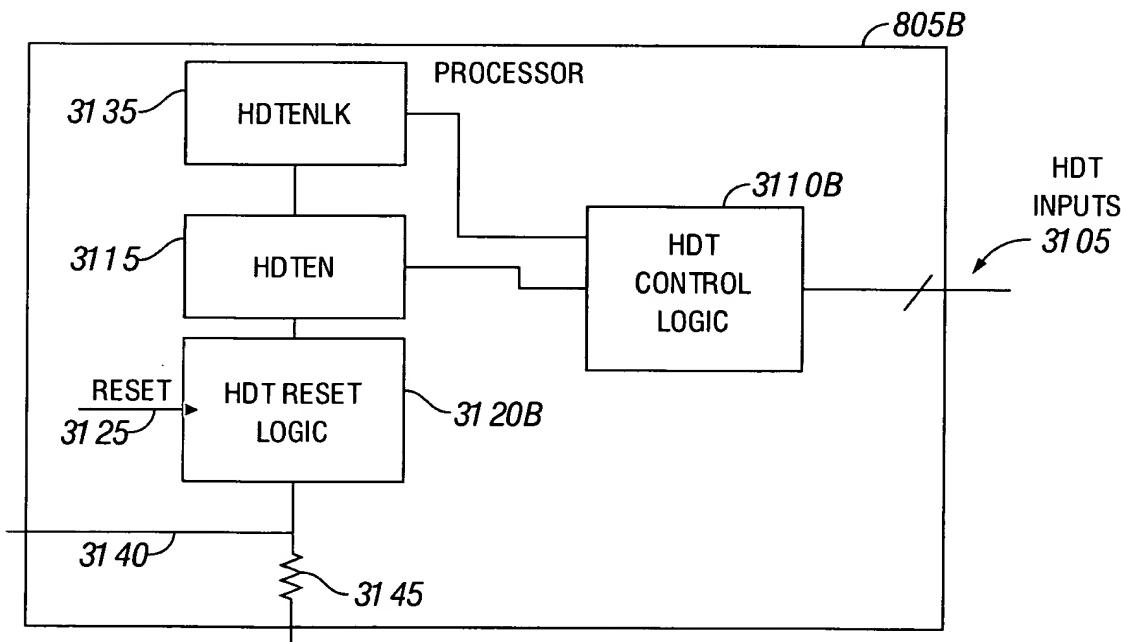
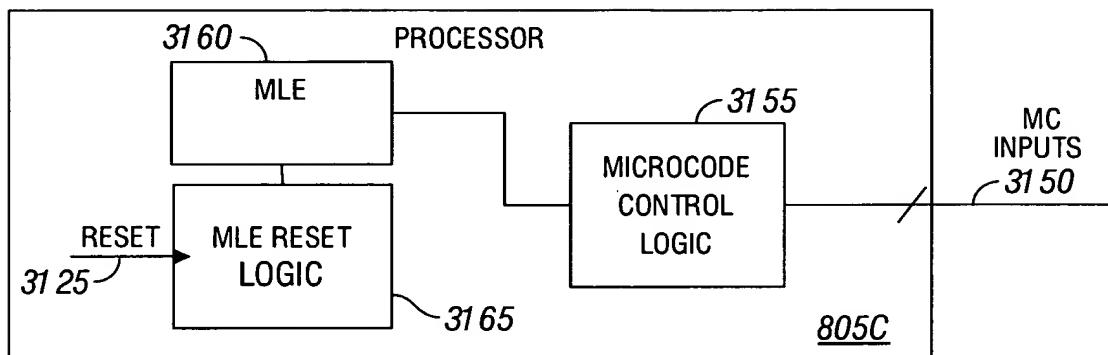
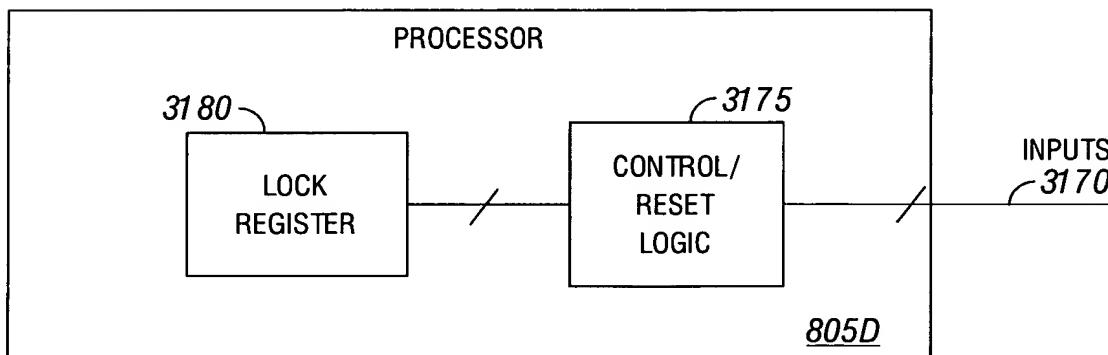


FIG. 20B

42/73**FIG. 20C****FIG. 20D**

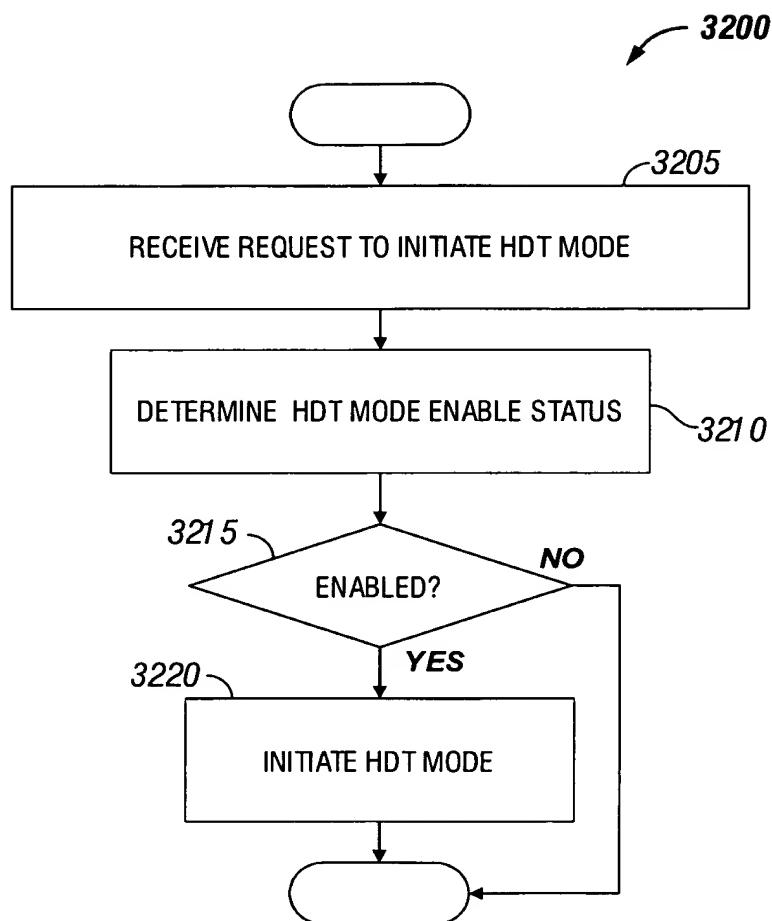
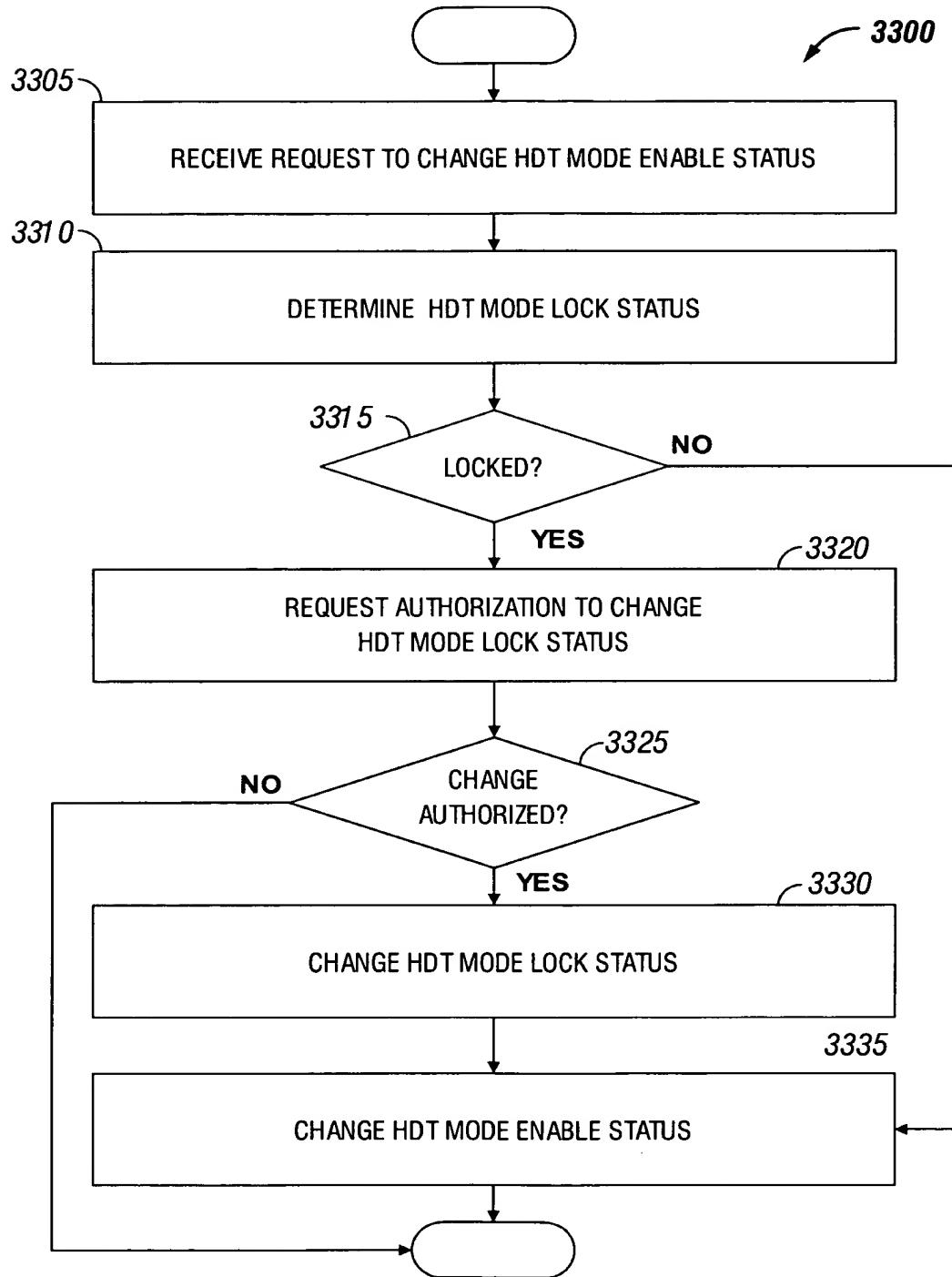


FIG. 21

44/73**FIG. 22**

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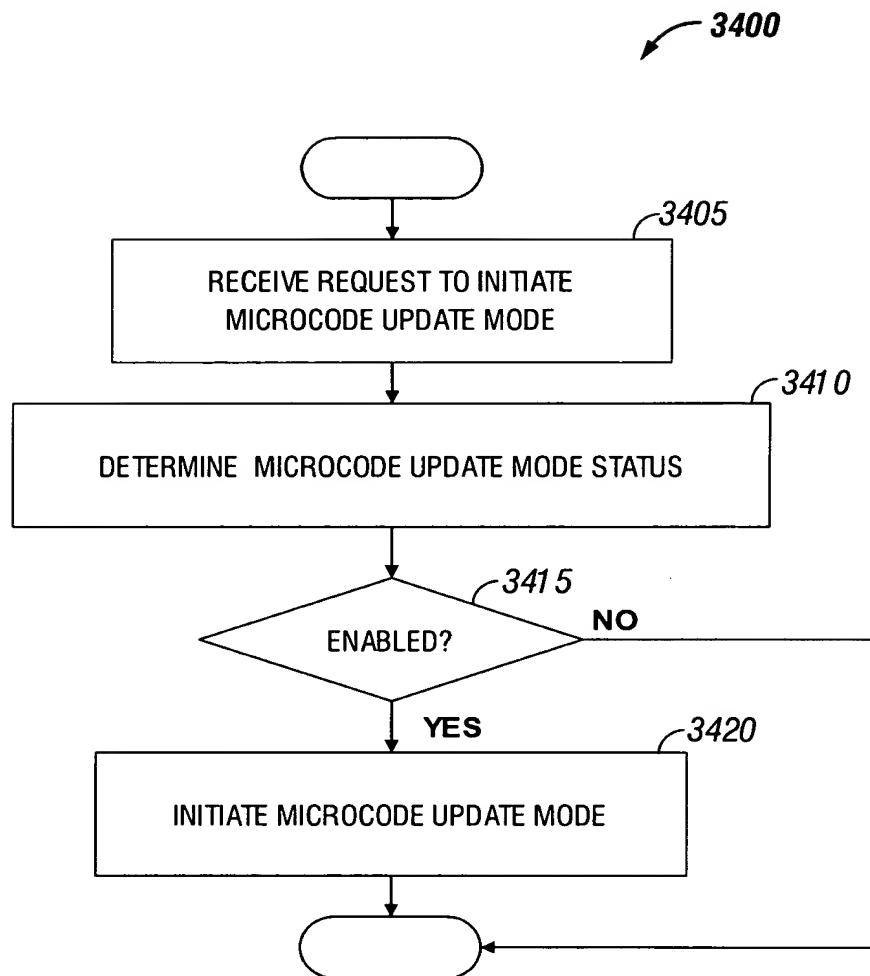
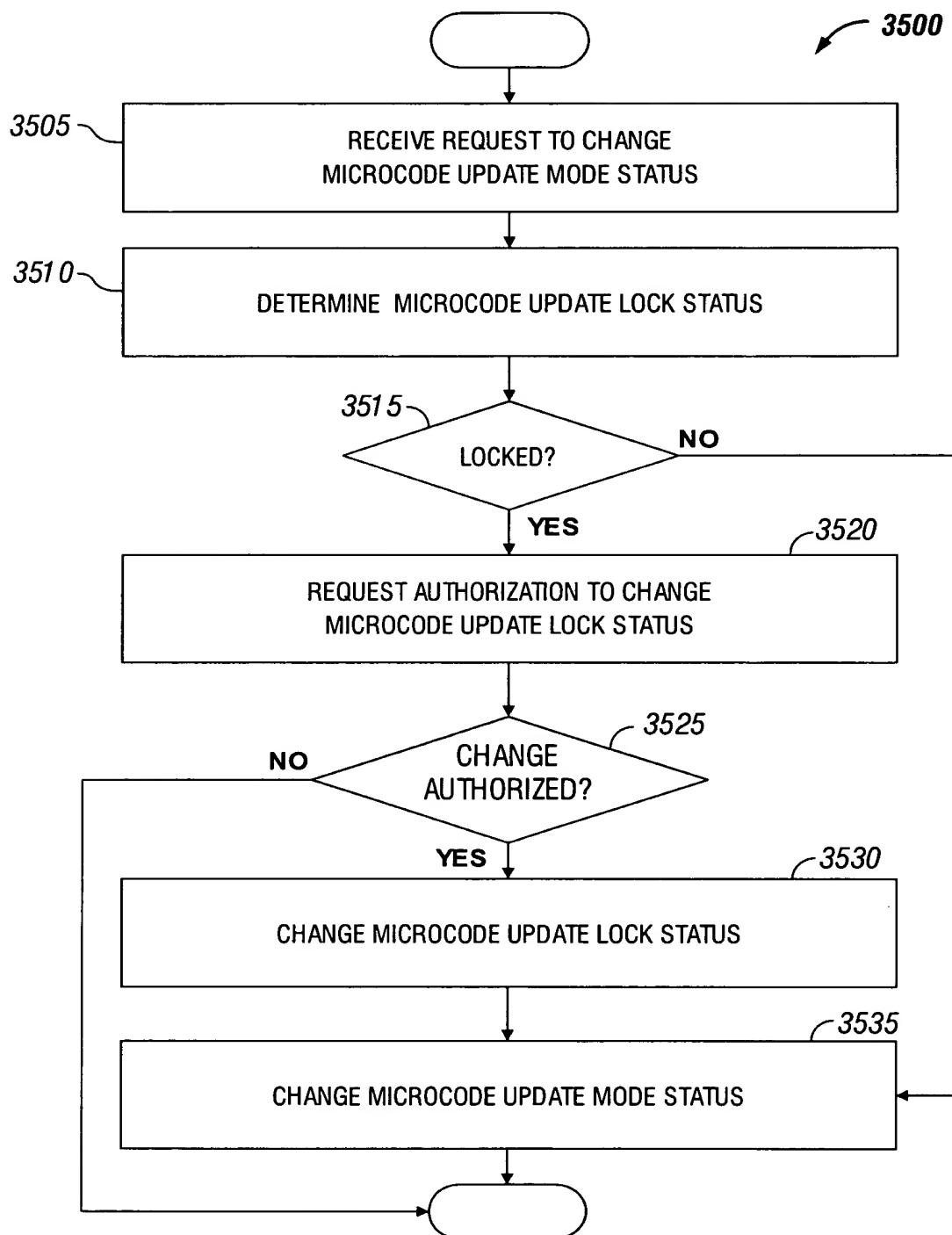


FIG. 23

46/73**FIG. 24**

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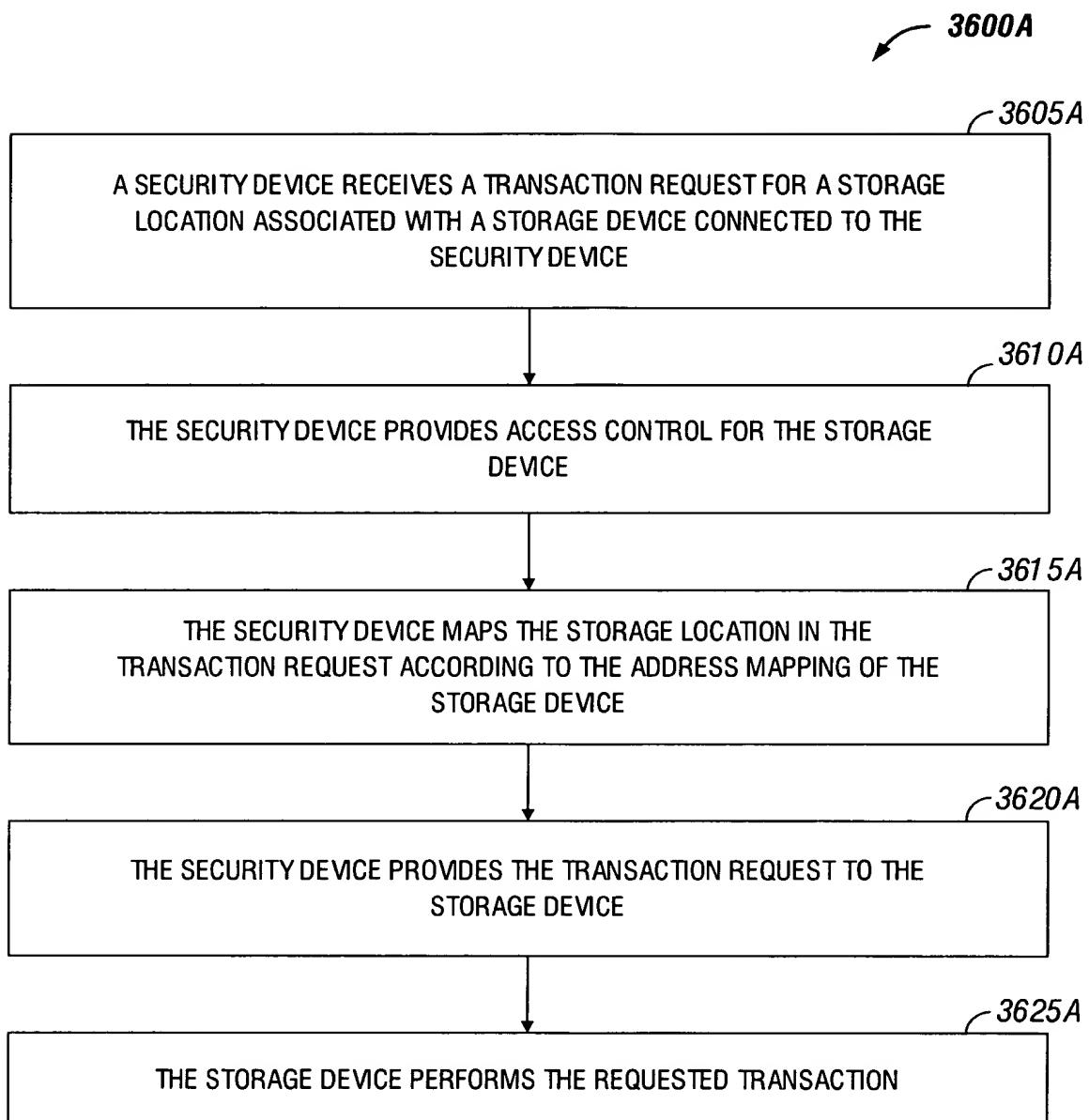


FIG. 25A

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3600B

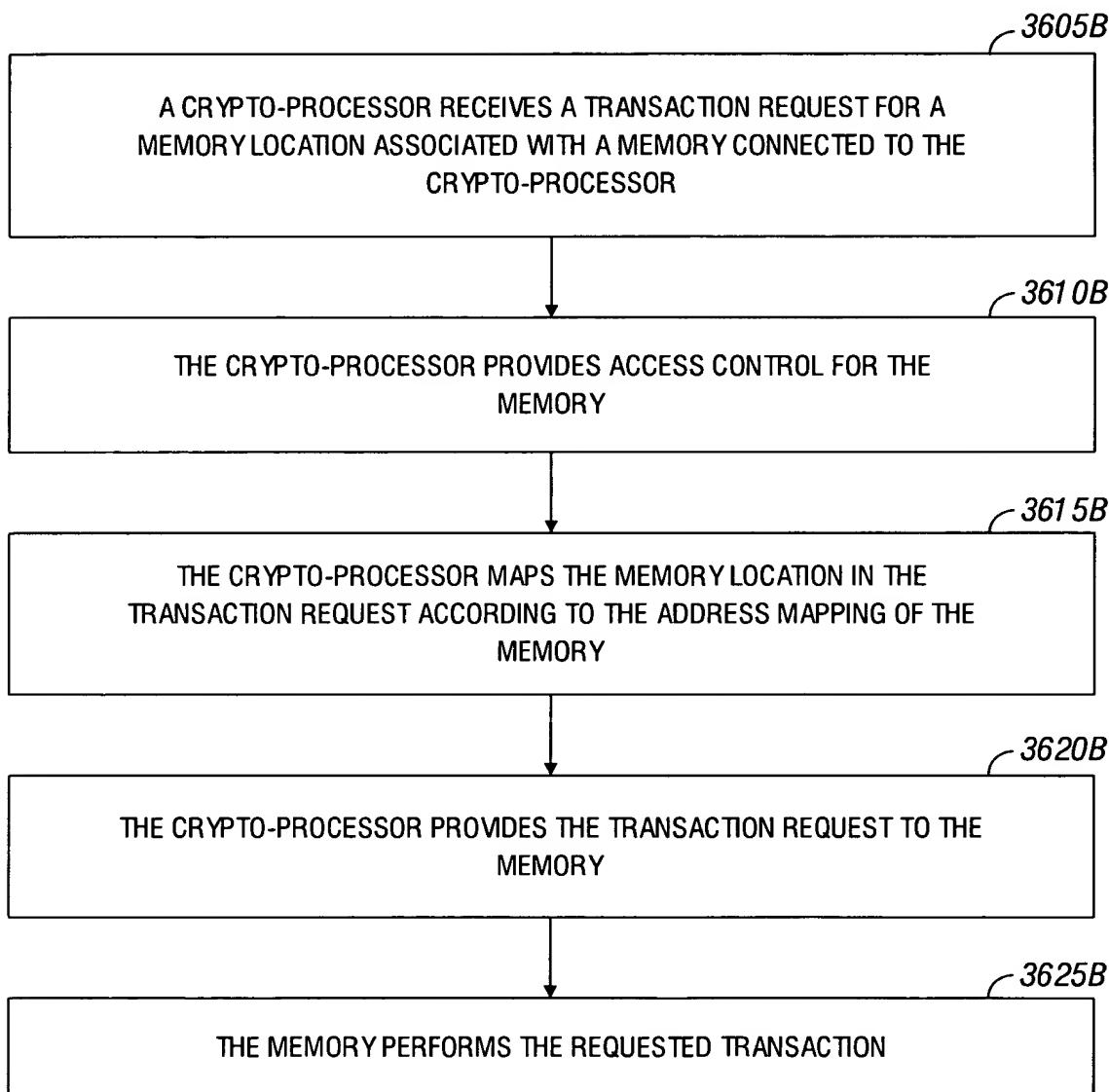


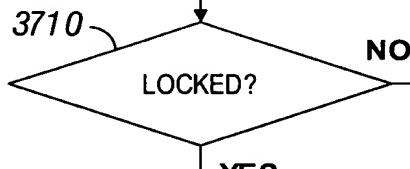
FIG. 25B

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3610A

3705

THE SECURITY DEVICE DETERMINES IF A LOCK IS IN PLACE FOR THE
STORAGE LOCATION



THE SECURITY DEVICE PROVIDES A CHALLENGE IN RESPONSE TO THE
TRANSACTION REQUEST FOR THE STORAGE LOCATION ASSOCIATED WITH
A STORAGE DEVICE CONNECTED TO THE SECURITY DEVICE

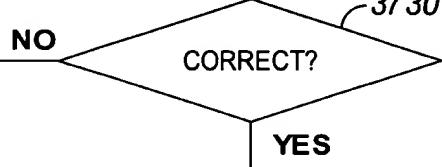
3720

THE SECURITY DEVICE RECEIVES A RESPONSE TO THE CHALLENGE

3725

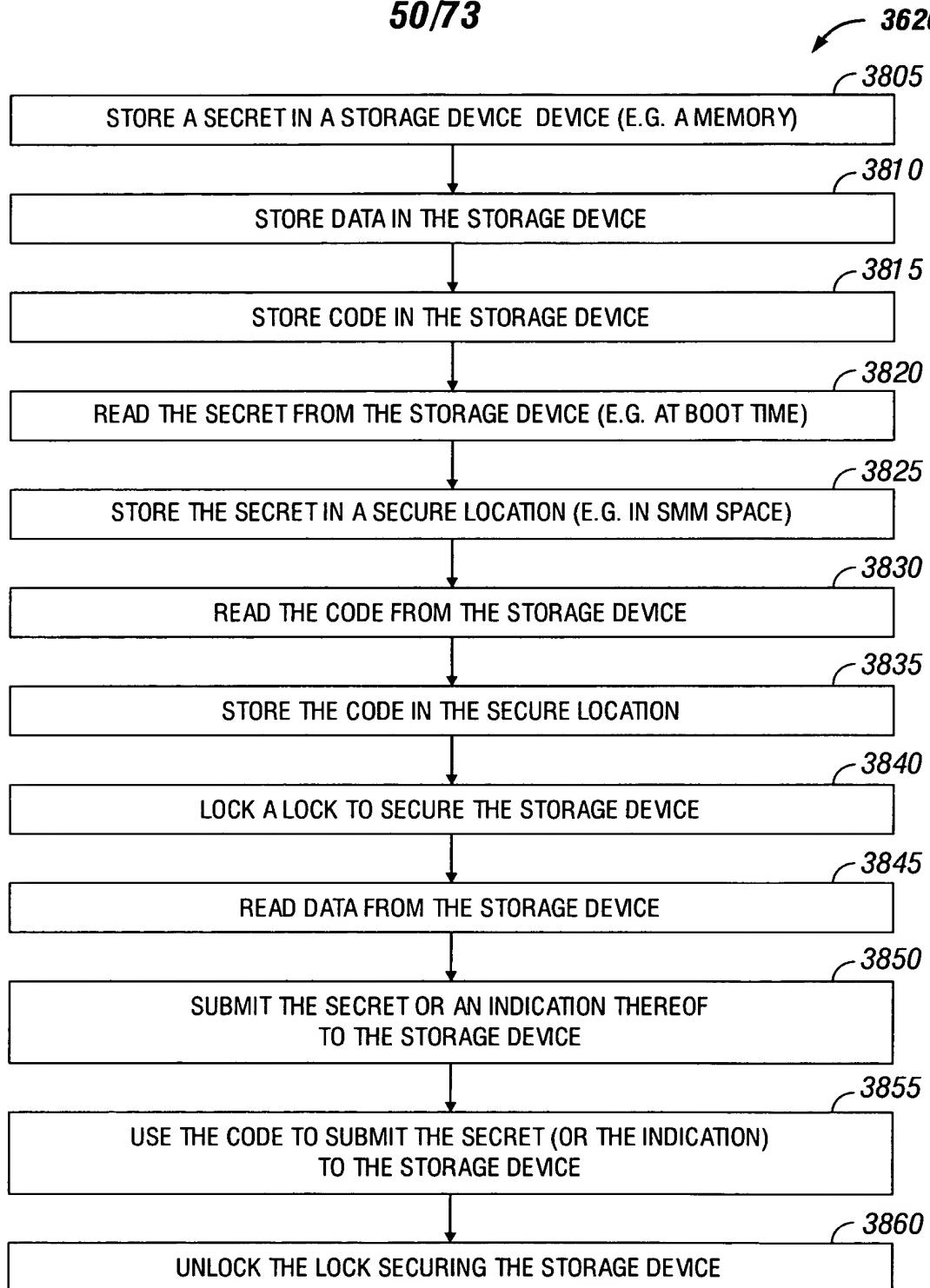
THE SECURITY DEVICE EVALUATES THE RESPONSE BY COMPARING THE
RESPONSE TO AN EXPECTED RESPONSE

END



THE SECURITY DEVICE PROVIDES THE TRANSACTION REQUEST TO THE
STORAGE DEVICE

FIG. 26

50/73**FIG. 27**

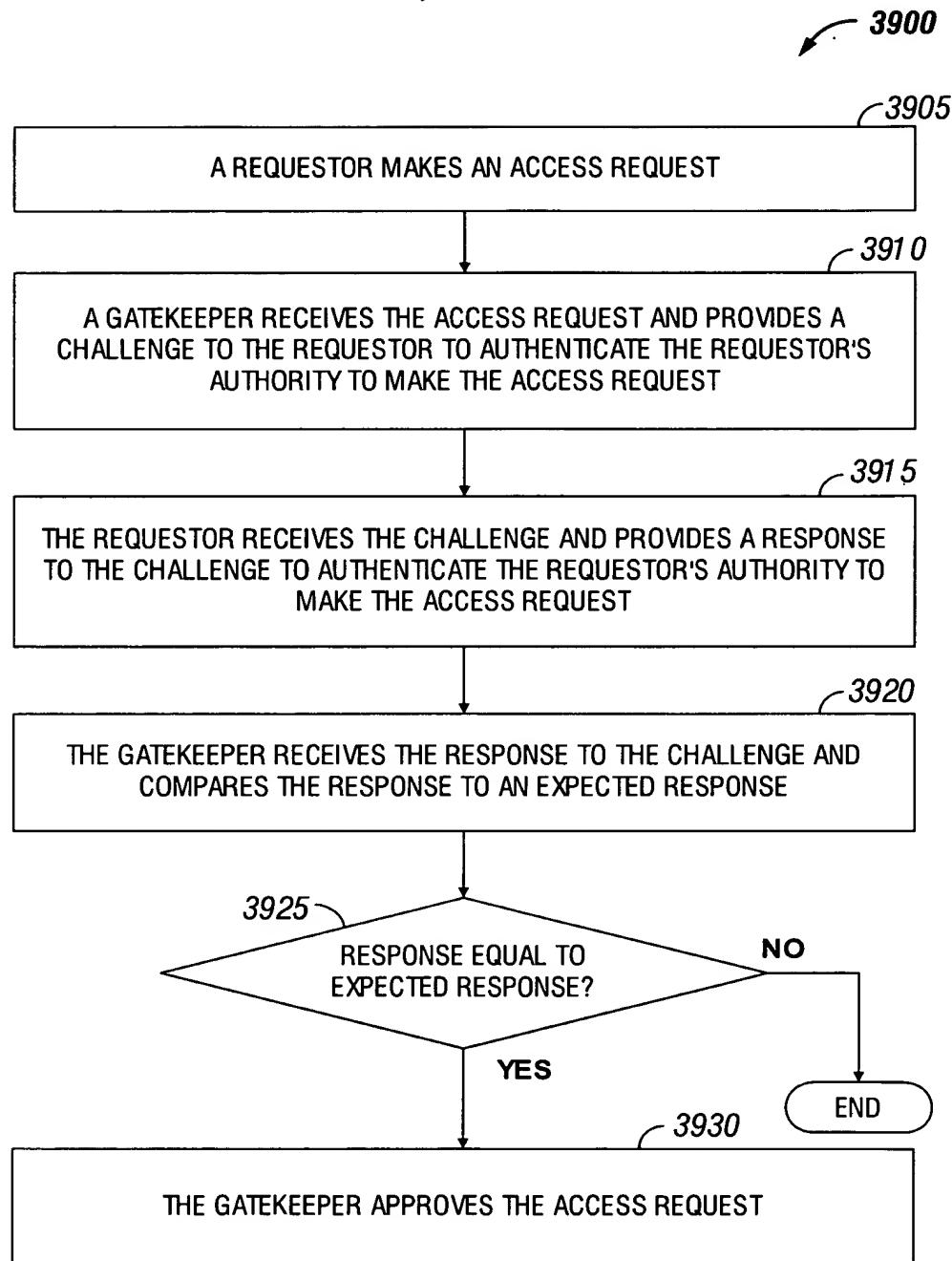
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FIG. 28
(Prior Art)

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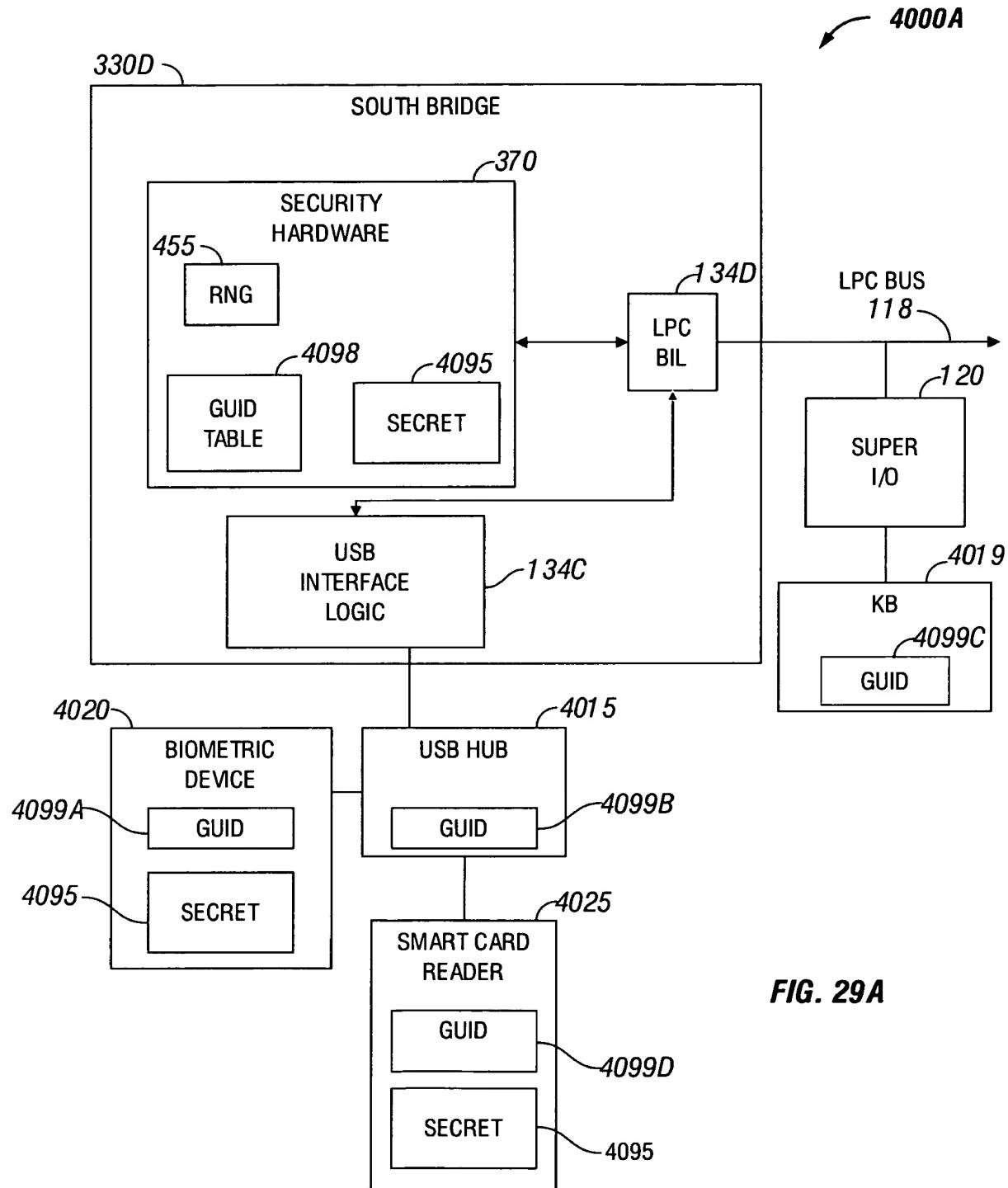


FIG. 29A

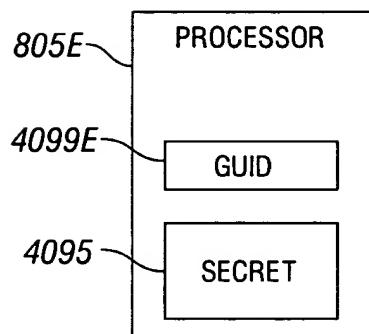


FIG. 29B

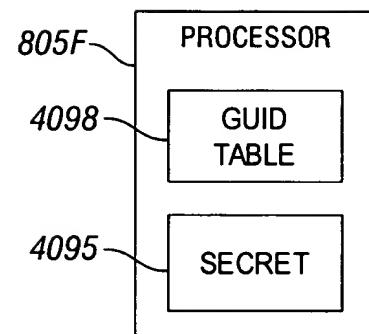


FIG. 29C

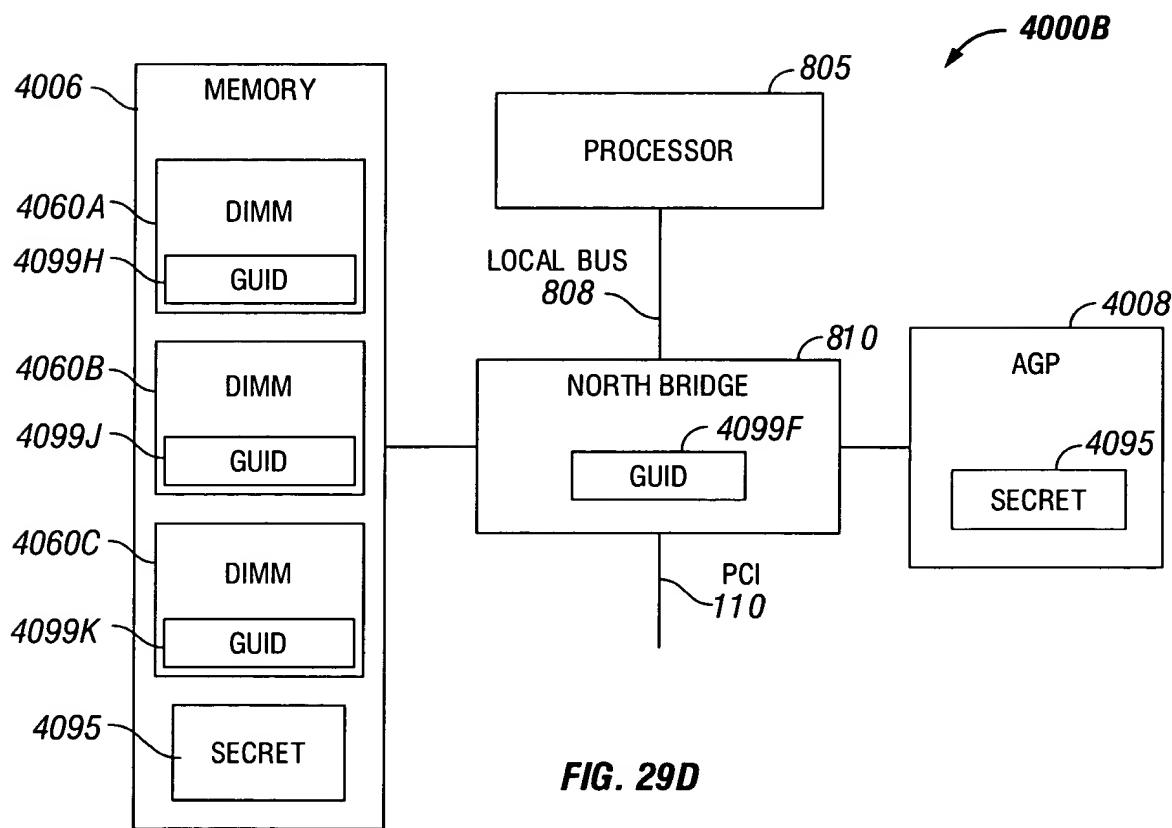


FIG. 29D

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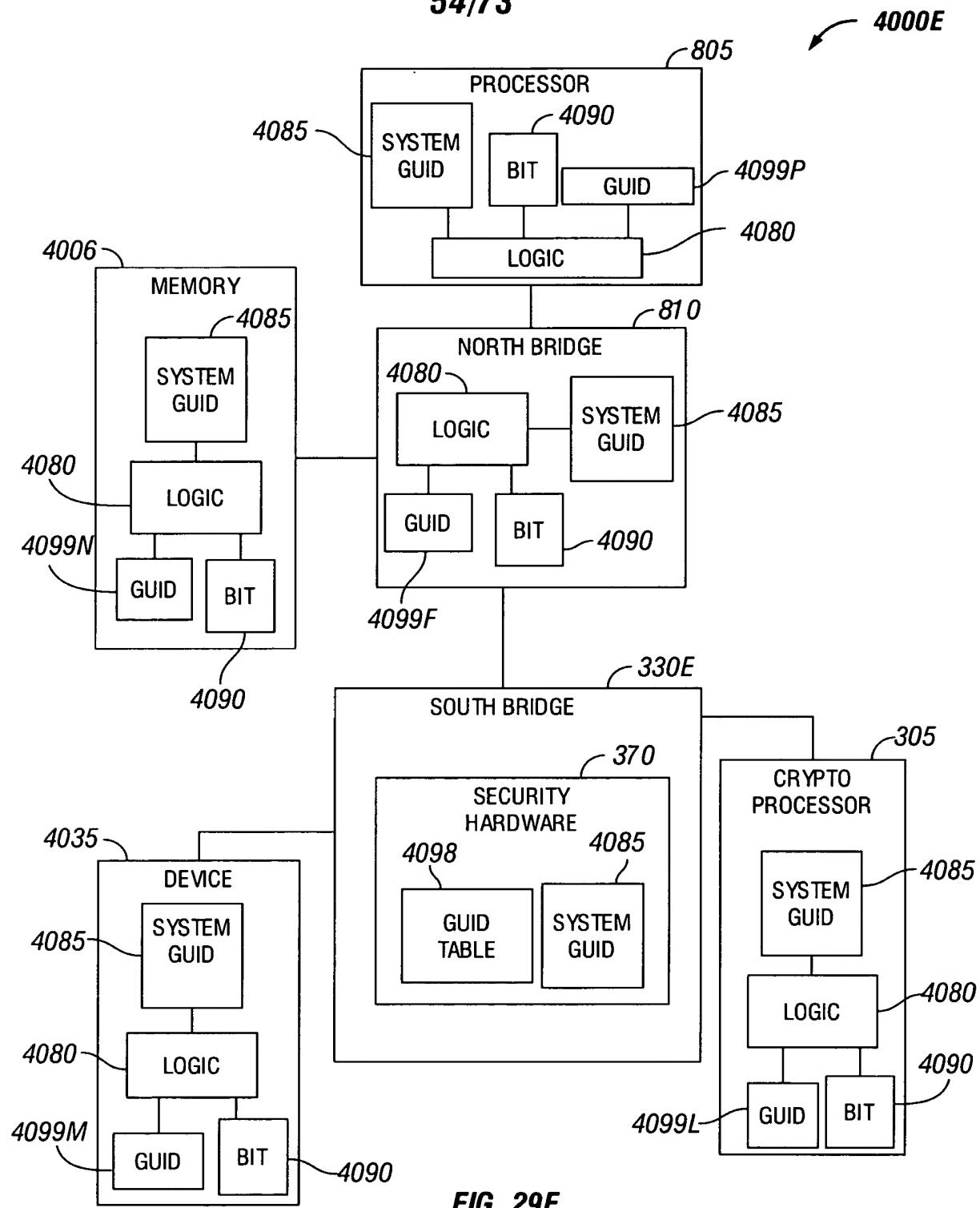


FIG. 29E

55/73*4100A**4110*

A BIOMETRIC DATA TRANSACTION IS REQUESTED INVOLVING A BIOMETRIC DEVICE

4115

A NONCE OR RANDOM NUMBER IS PROVIDED TO THE BIOMETRIC DEVICE

4120A

THE BIOMETRIC DEVICE RESPONDS TO THE DATA TRANSACTION REQUEST WITH THE REQUESTED BIOMETRIC DATA AND THE RESULT OF A HASH USING A SECRET AND THE NONCE OR RANDOM NUMBER

4125A

THE RESULT OF THE HASH USING THE SECRET AND THE NONCE OR RANDOM NUMBER IS COMPARED TO AN EXPECTED VALUE FOR THE RESULT OF THE HASH

SAME?

NO

YES

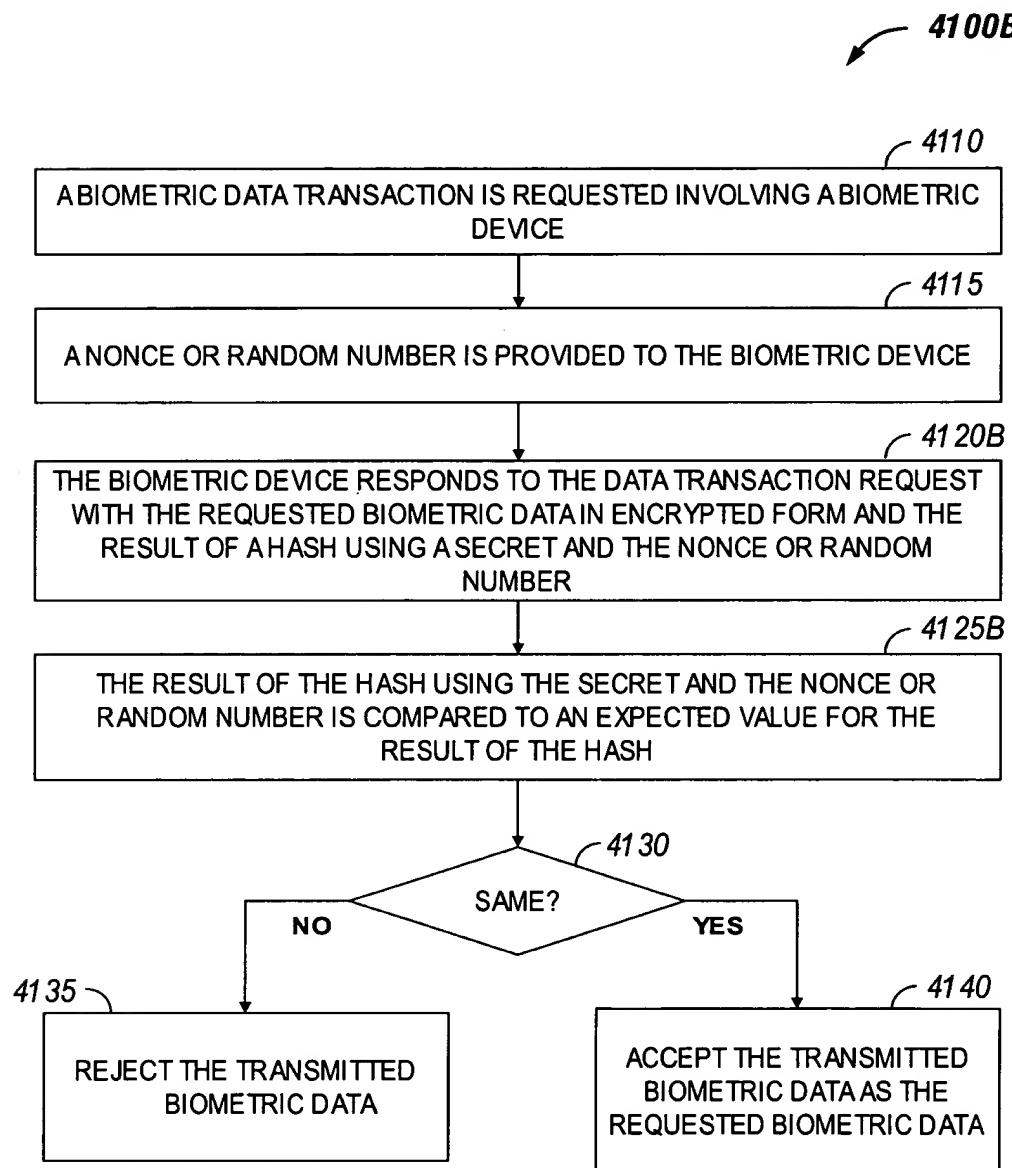
4135

REJECT THE TRANSMITTED BIOMETRIC DATA

4140

ACCEPT THE TRANSMITTED BIOMETRIC DATA AS THE REQUESTED BIOMETRIC DATA

FIG. 30A

56/73**FIG. 30B**

57/73**4200A****4205**

A MASTER DEVICE IN THE COMPUTER SYSTEM ESTABLISHES A SECRET WITH A DEVICE IN THE COMPUTER SYSTEM DURING A TRUSTED SET-UP

4210

A DATA TRANSACTION IS REQUESTED INVOLVING THE DEVICE IN THE COMPUTER SYSTEM THAT KNOWS THE SECRET

4215

A NONCE OR RANDOM NUMBER IS PROVIDED TO THE DEVICE IN THE COMPUTER SYSTEM THAT KNOWS THE SECRET

4220A

THE DEVICE RESPONDS TO THE DATA TRANSACTION REQUEST WITH EITHER THE REQUESTED DATA AND A RESULT OF A HASH USING THE SECRET AND THE NONCE OR RANDOM NUMBER OR THE RESULT OF THE HASH

4225

THE RESULT OF THE HASH USING THE SECRET AND THE NONCE OR RANDOM NUMBER IS COMPARED TO AN EXPECTED VALUE FOR THE RESULT OF THE HASH

4230

SAME?

NO

YES

4235

REJECT THE TRANSMITTED DATA OR DO NOT SEND THE DATA

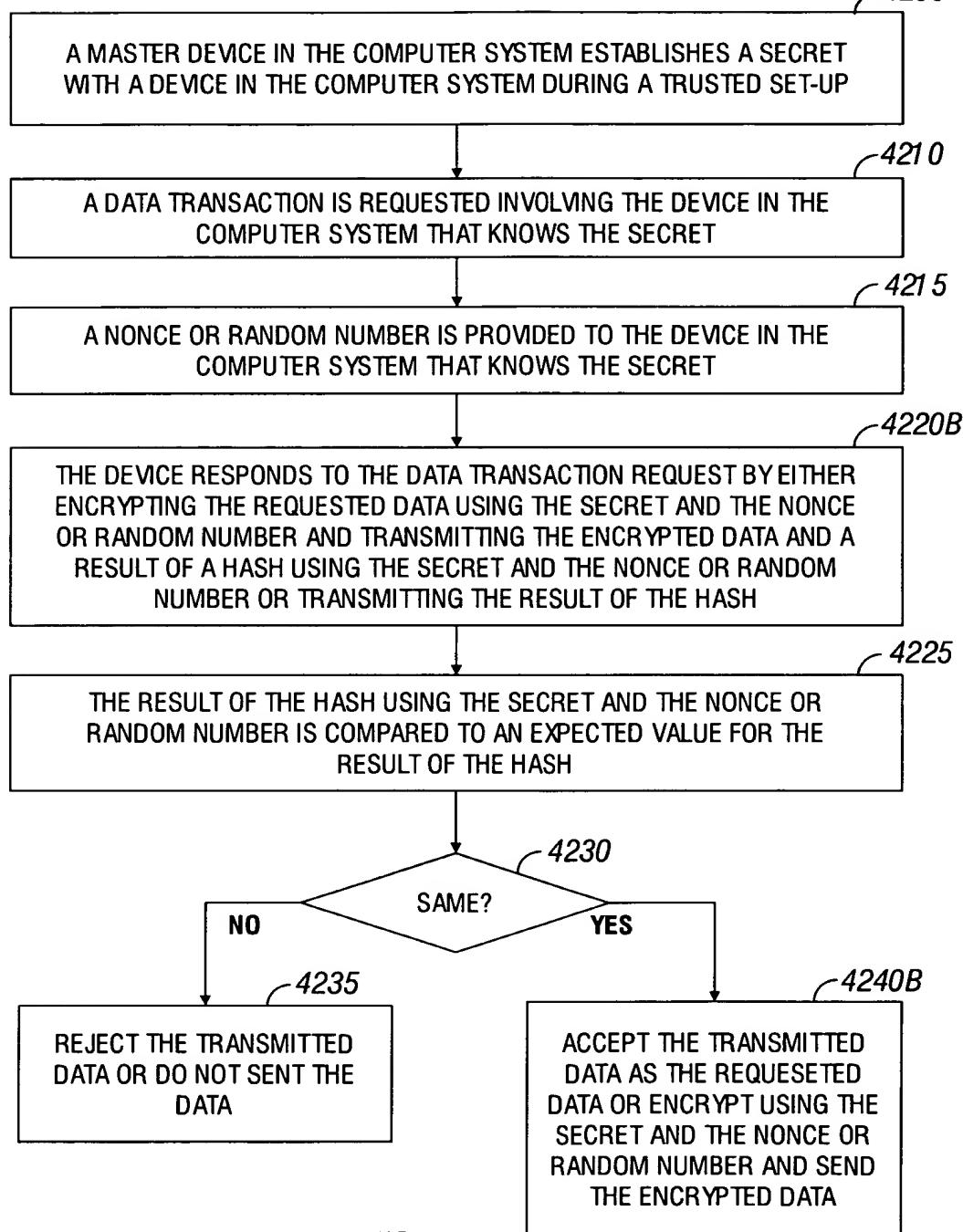
4240A

ACCEPT THE TRANSMITTED DATA AS THE REQUESTED DATA OR SEND THE DATA

FIG. 31A

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4200B

**FIG. 31B**

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4300A

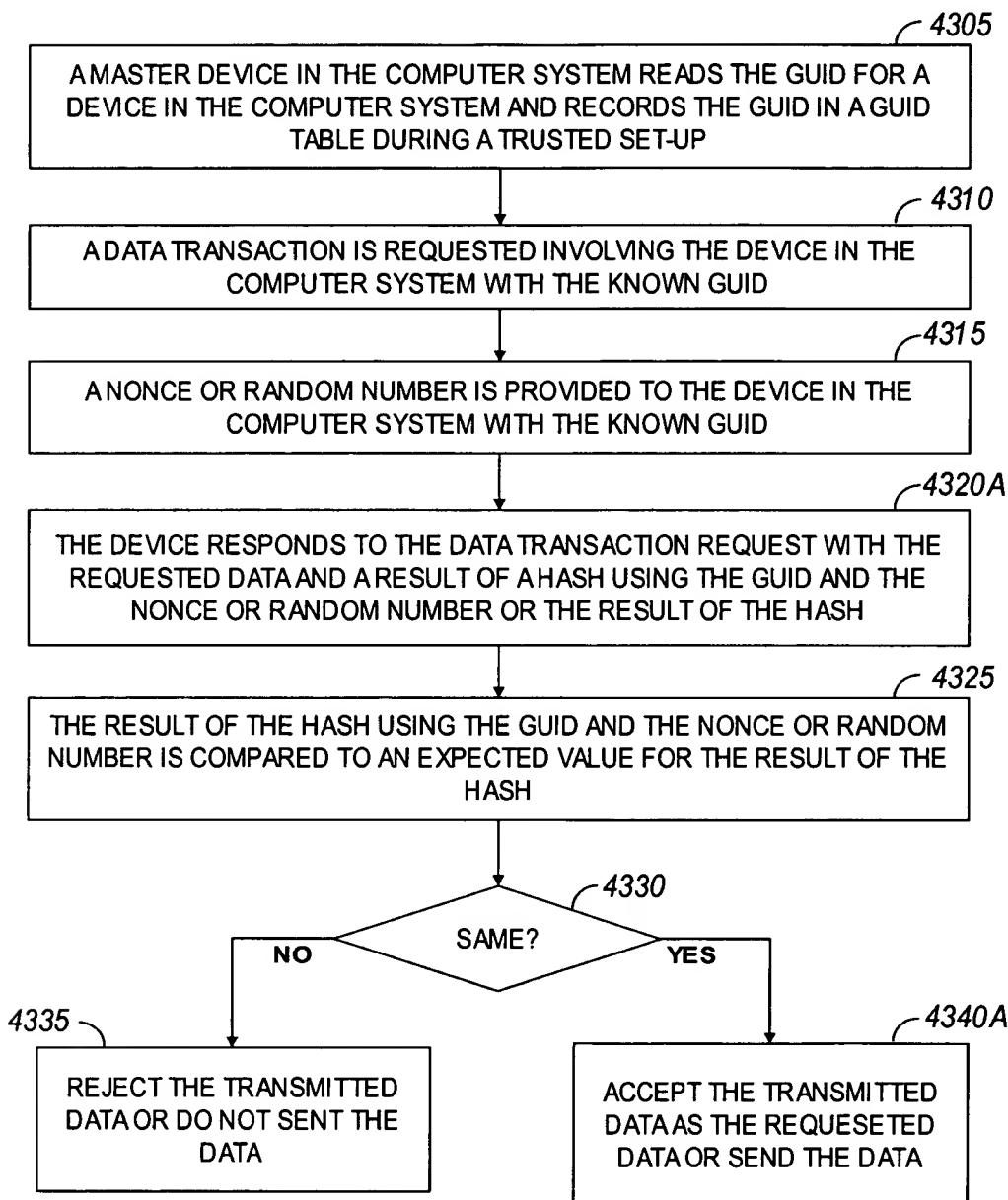
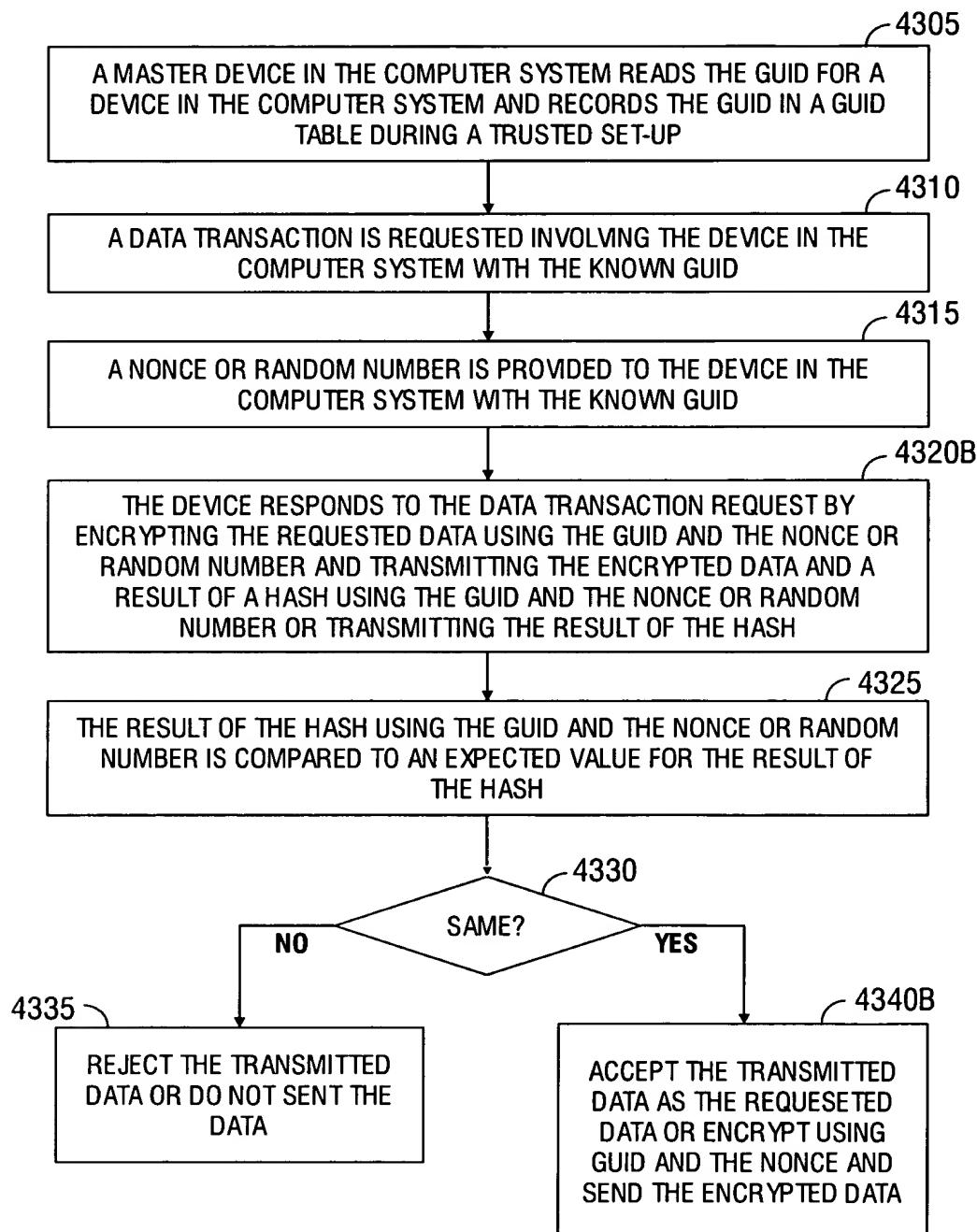
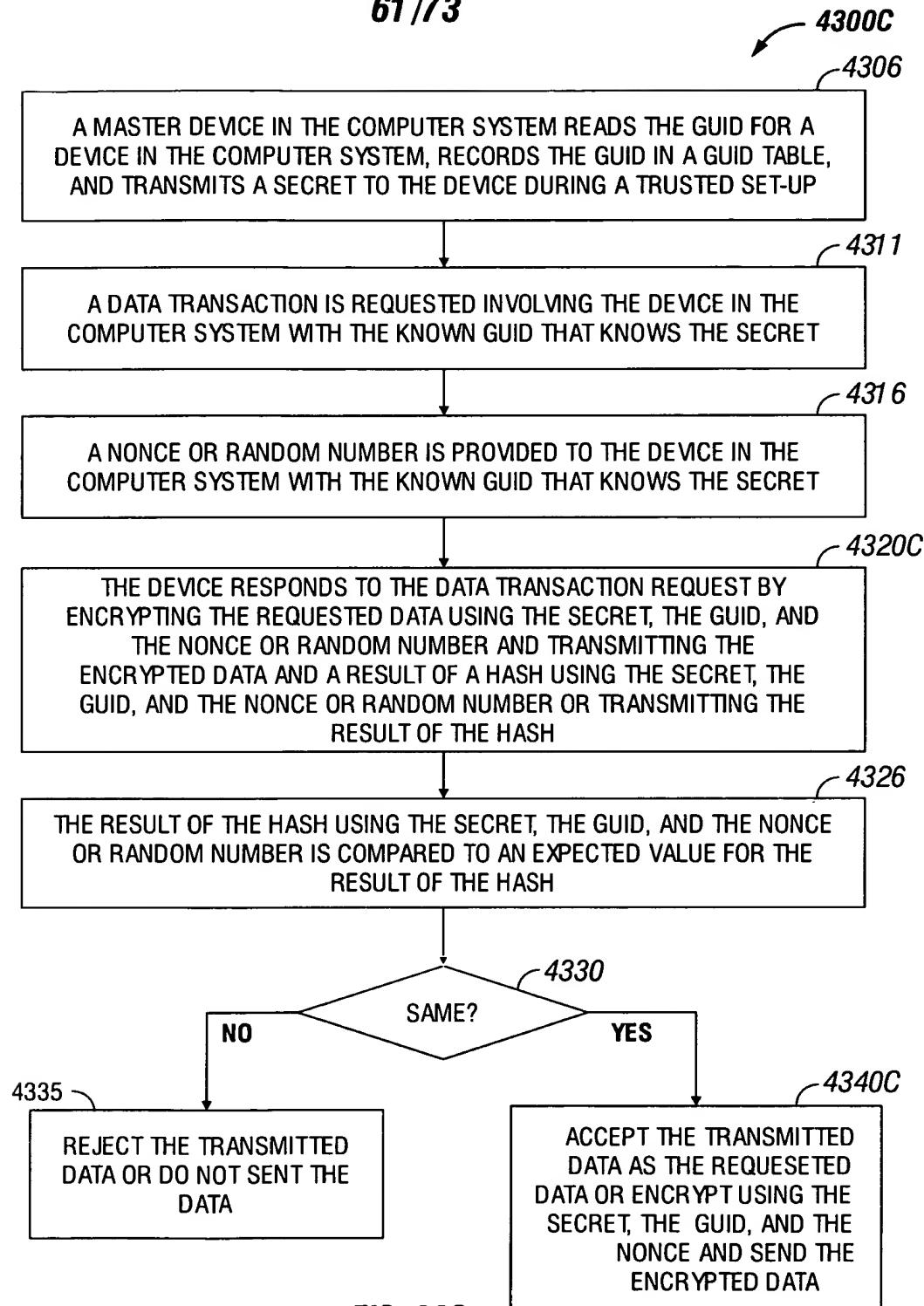
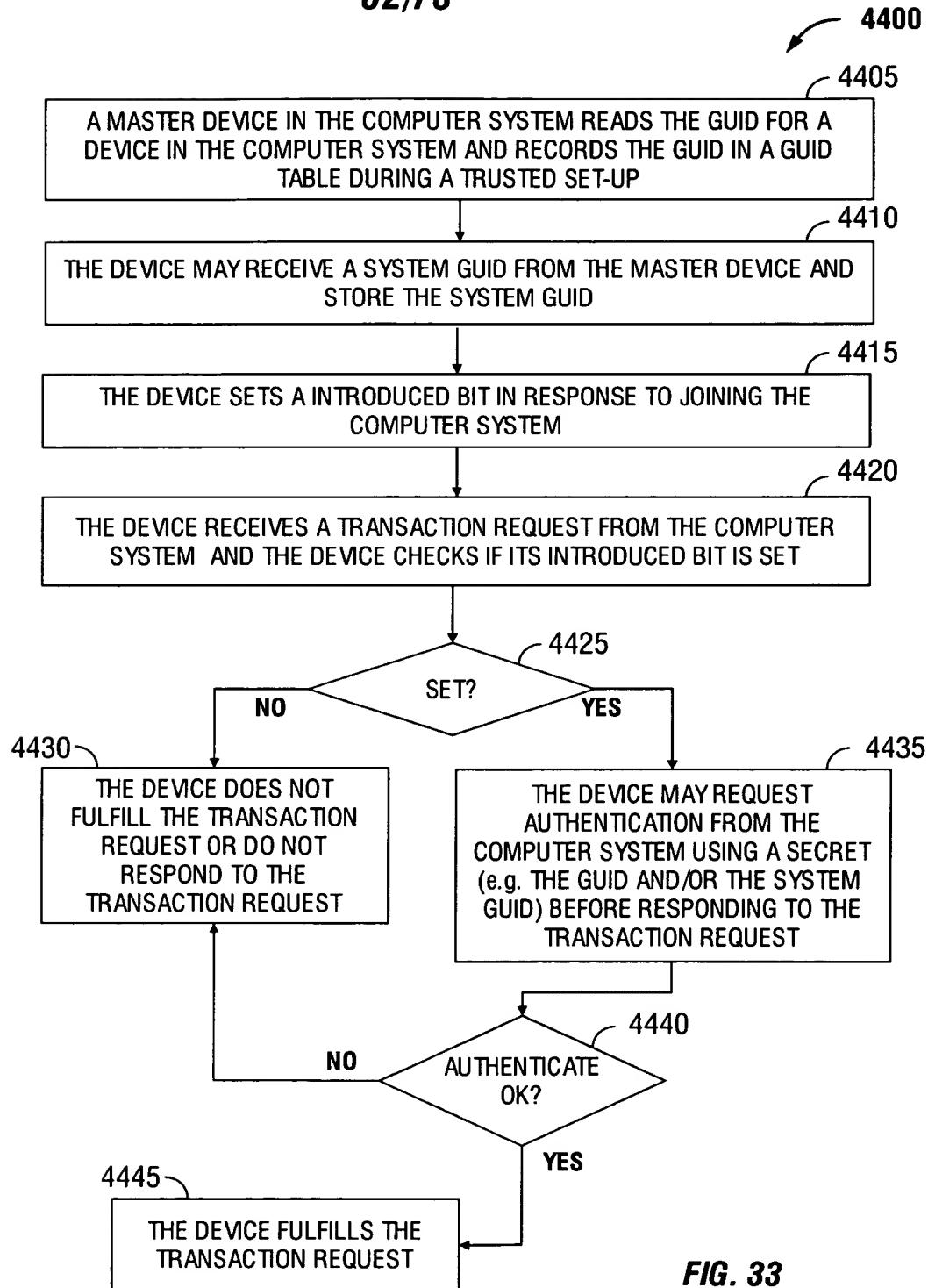


FIG. 32A

60/73**4300B****FIG. 32B**

61/73**FIG. 32C**

62/73**FIG. 33**

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4500

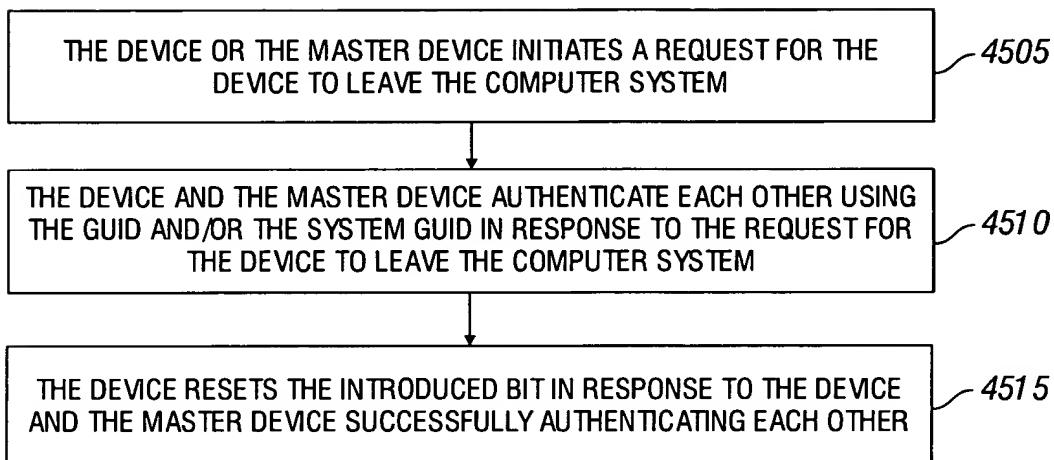


FIG. 34

4600

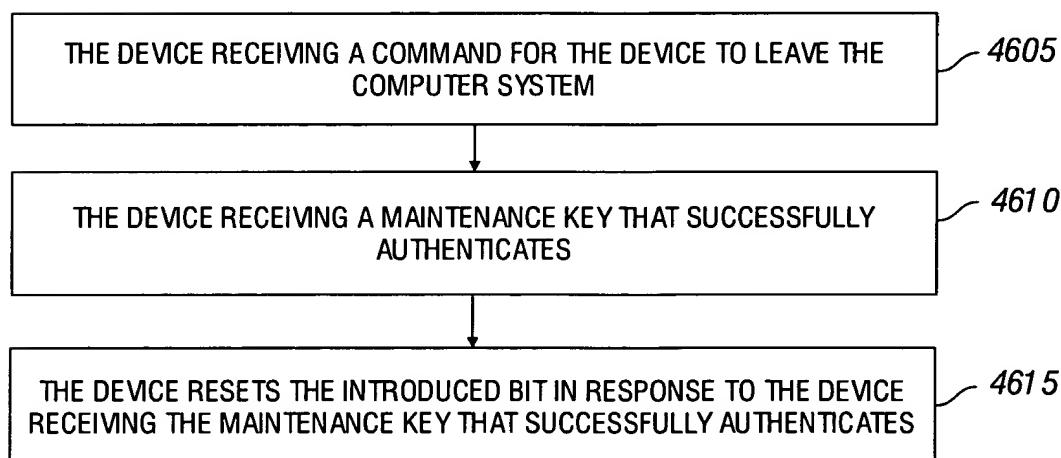
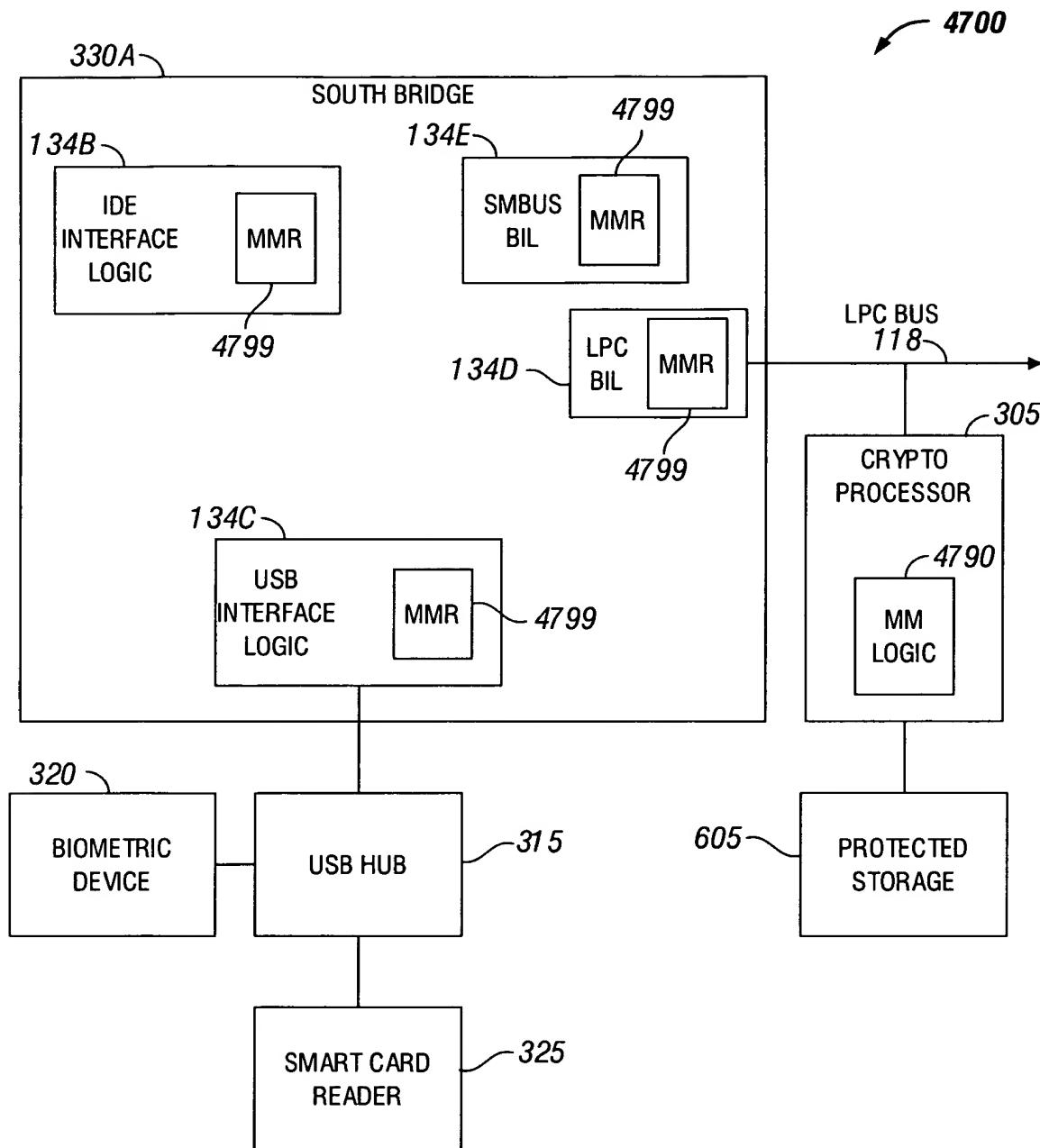
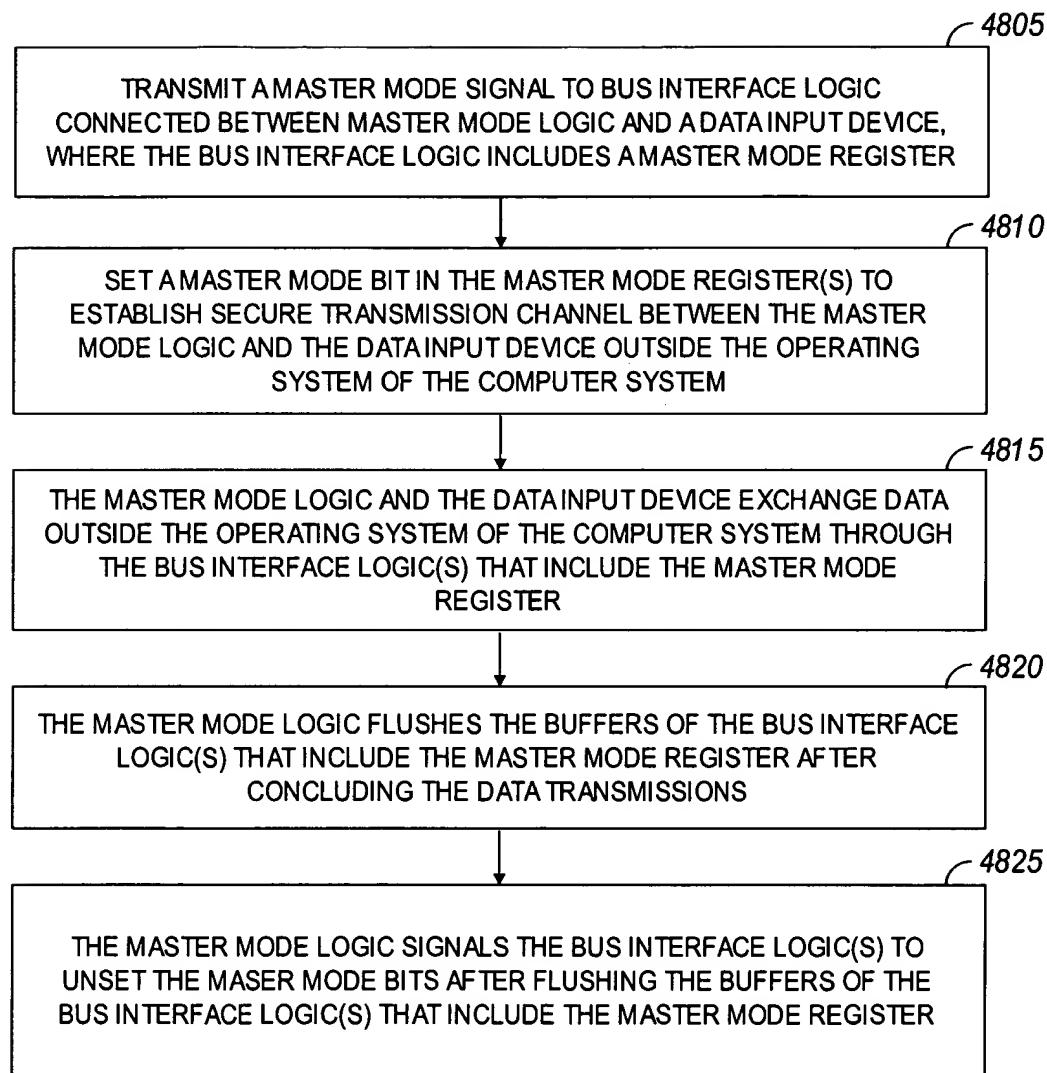


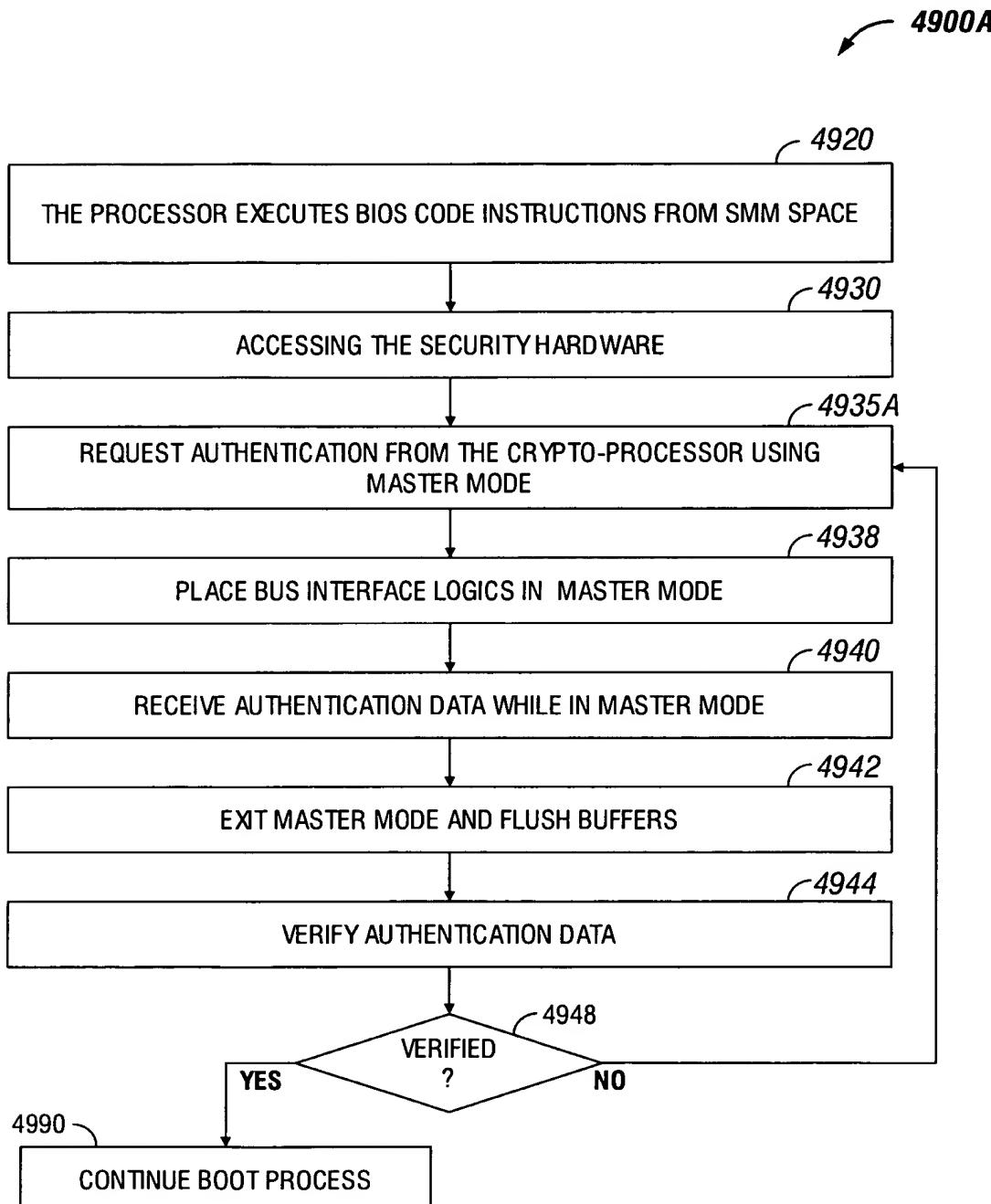
FIG. 35

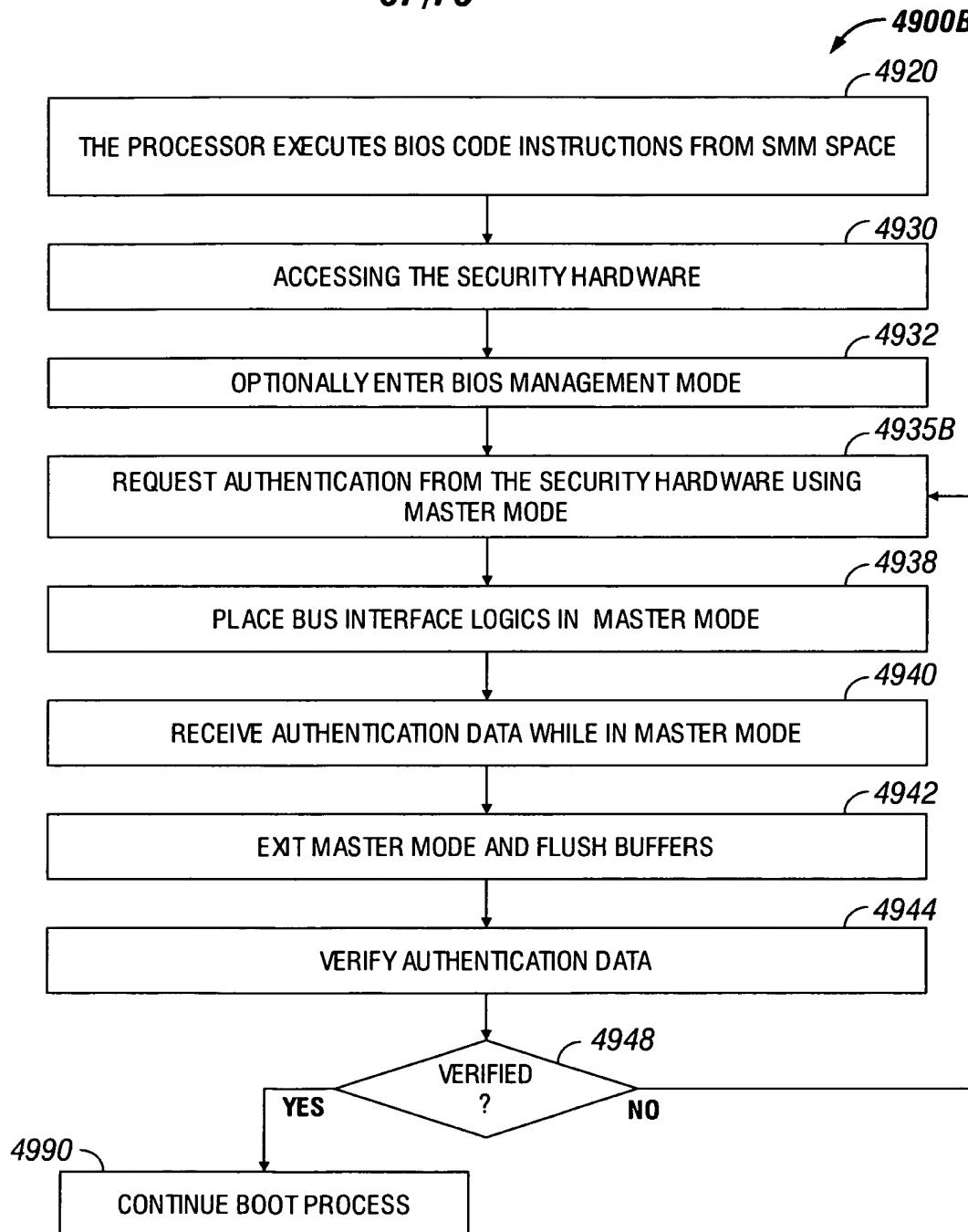
64/73**FIG. 36**

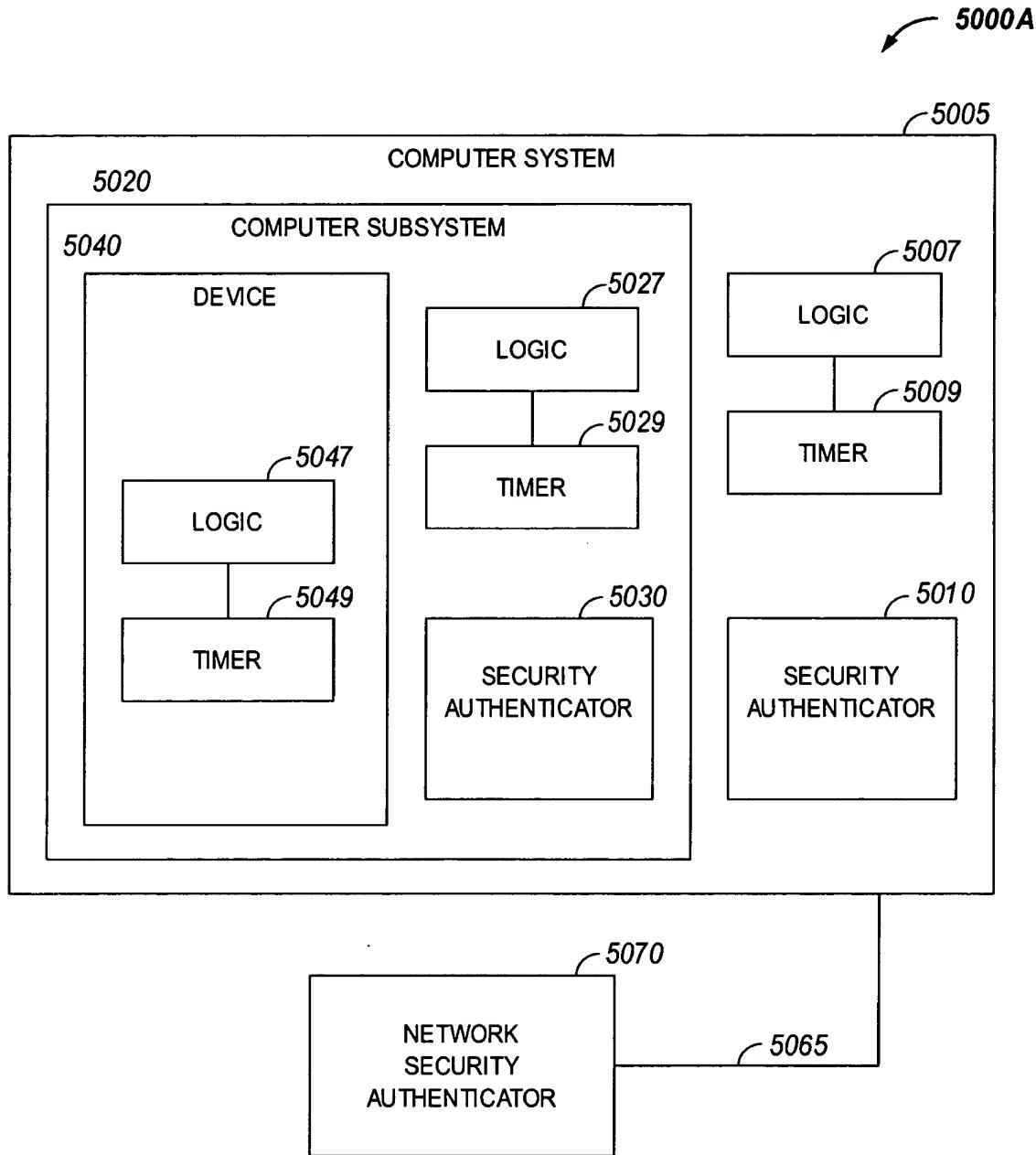
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4800

**FIG. 37**

66/73**FIG. 38A**

67/73**FIG. 38B**

68/73**FIG. 39A**

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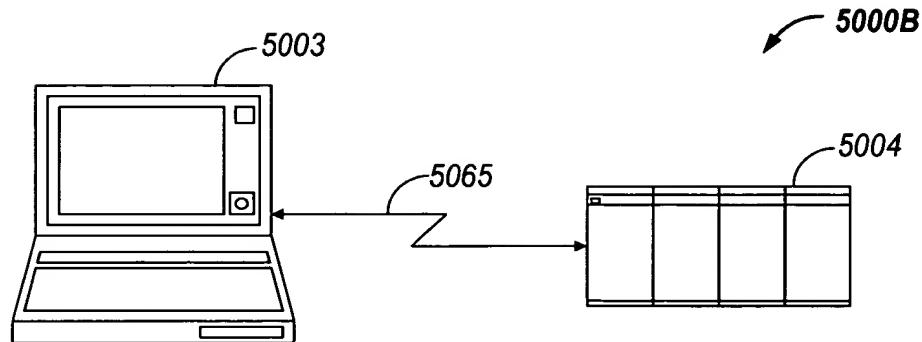


FIG. 39B

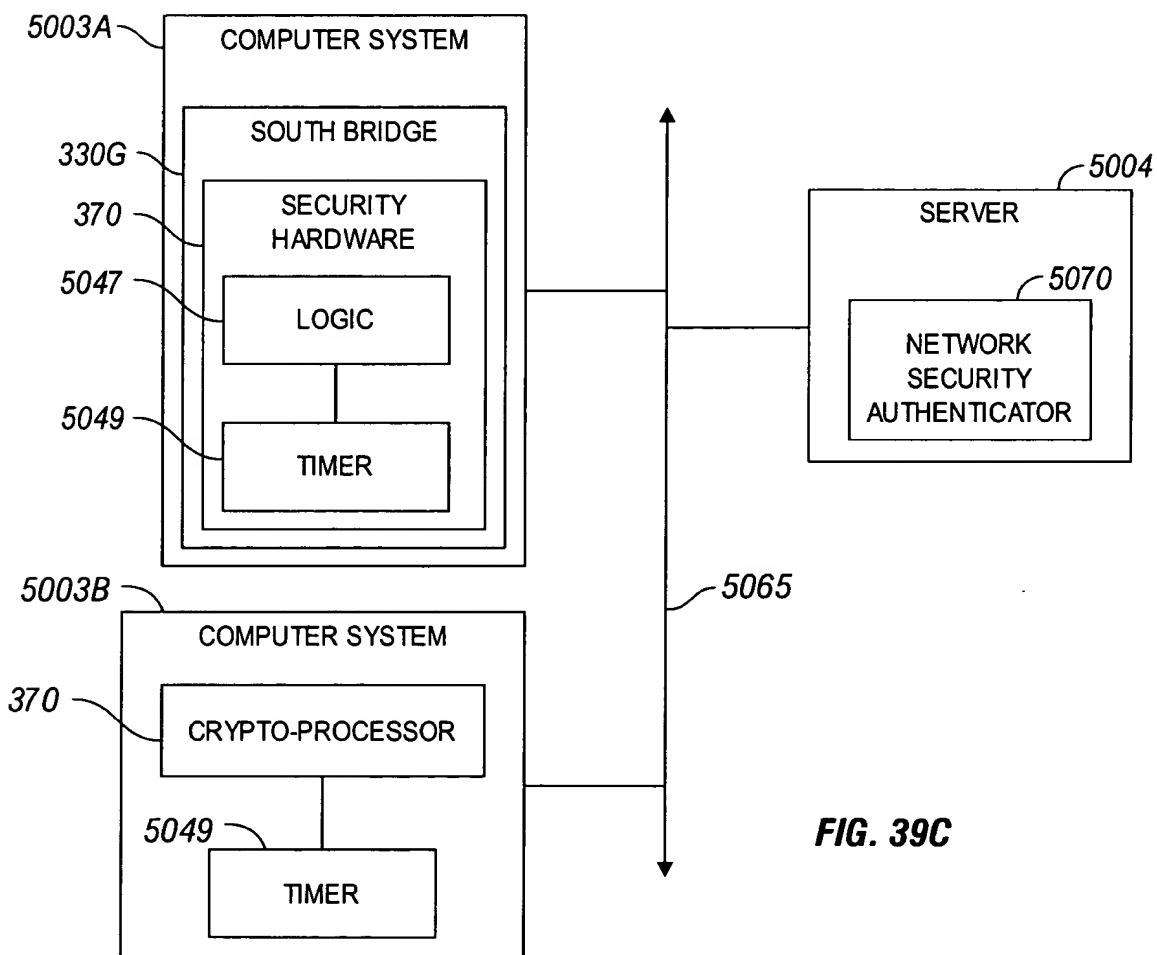


FIG. 39C

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5100A

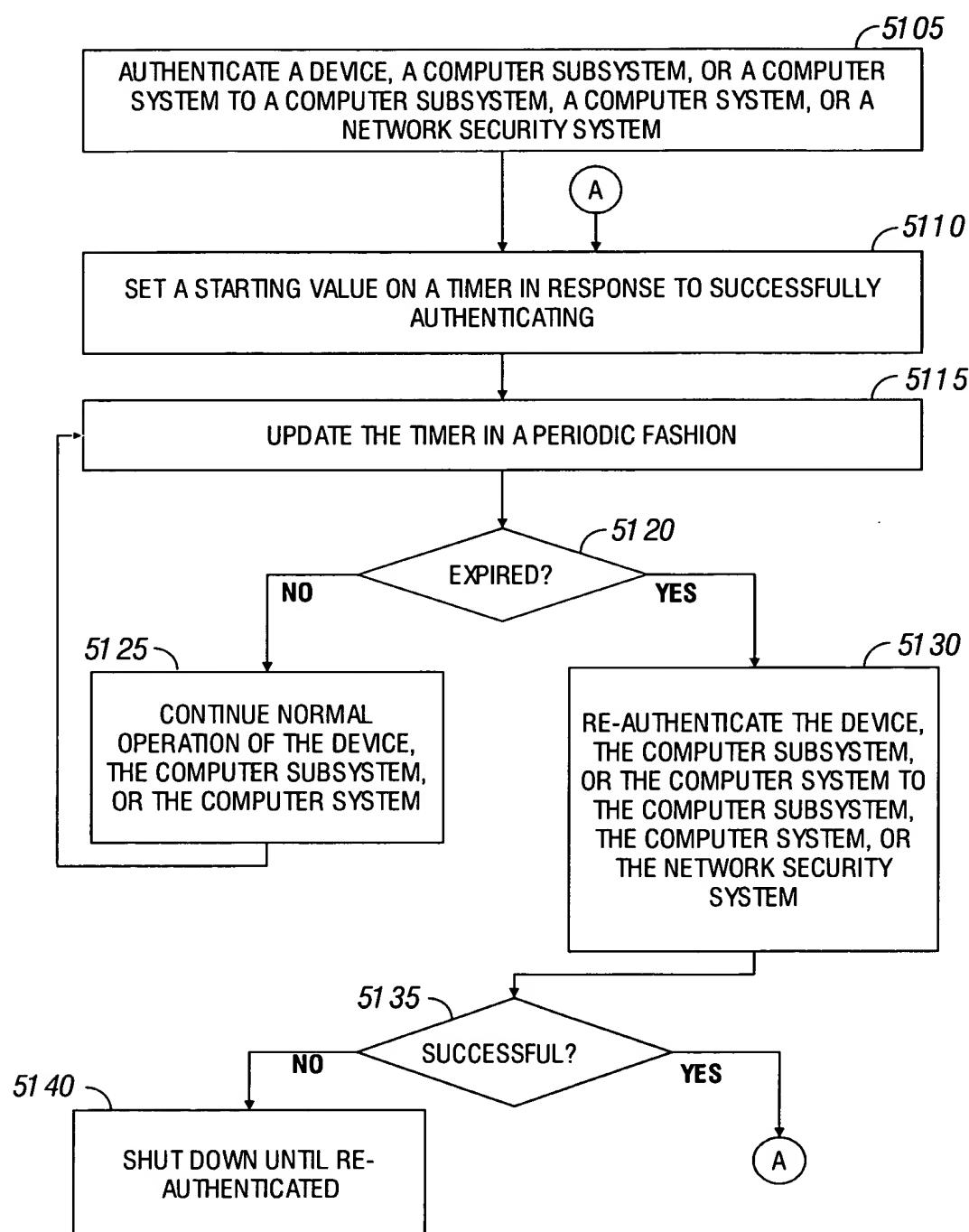


FIG. 40A

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5100B

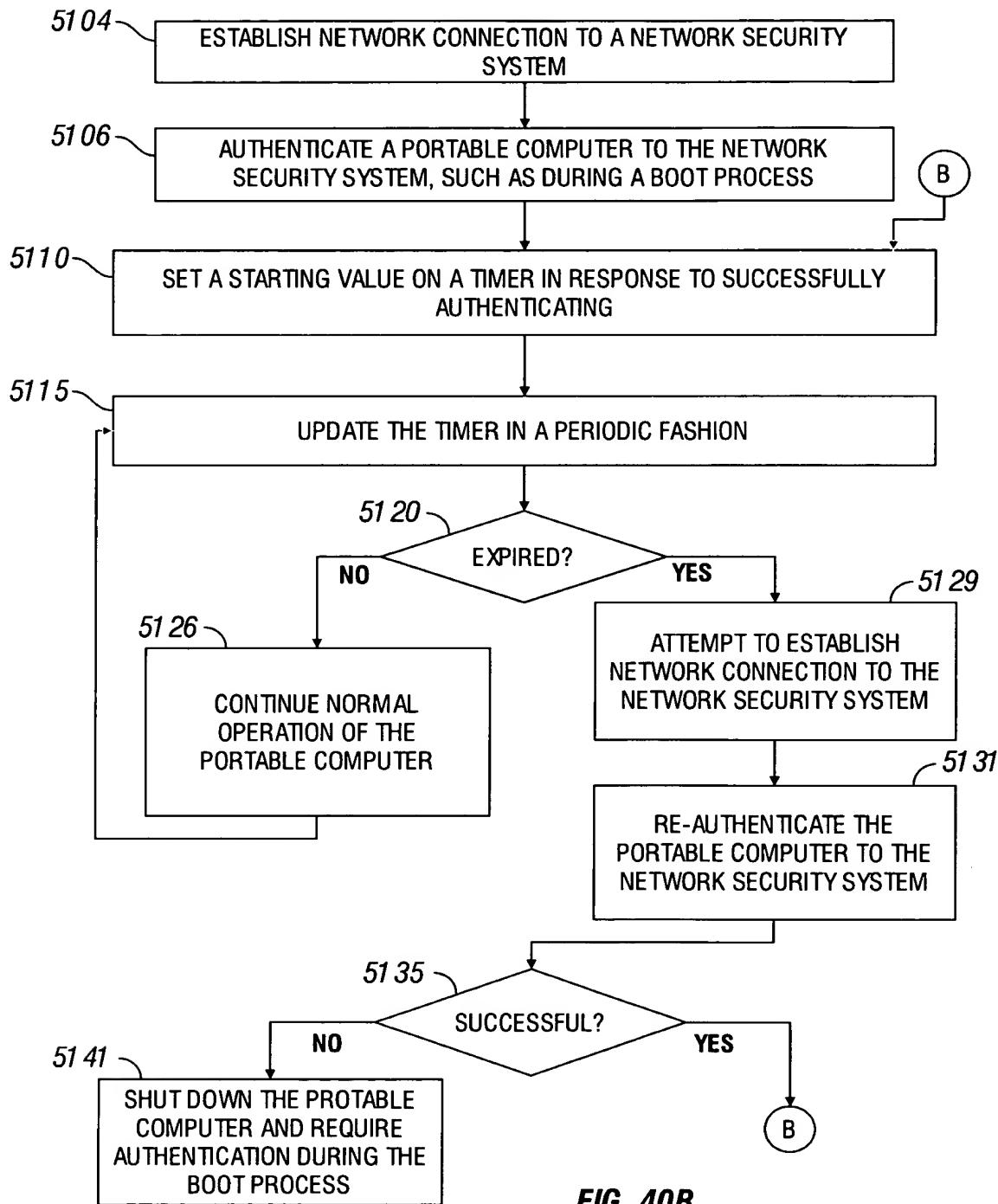


FIG. 40B

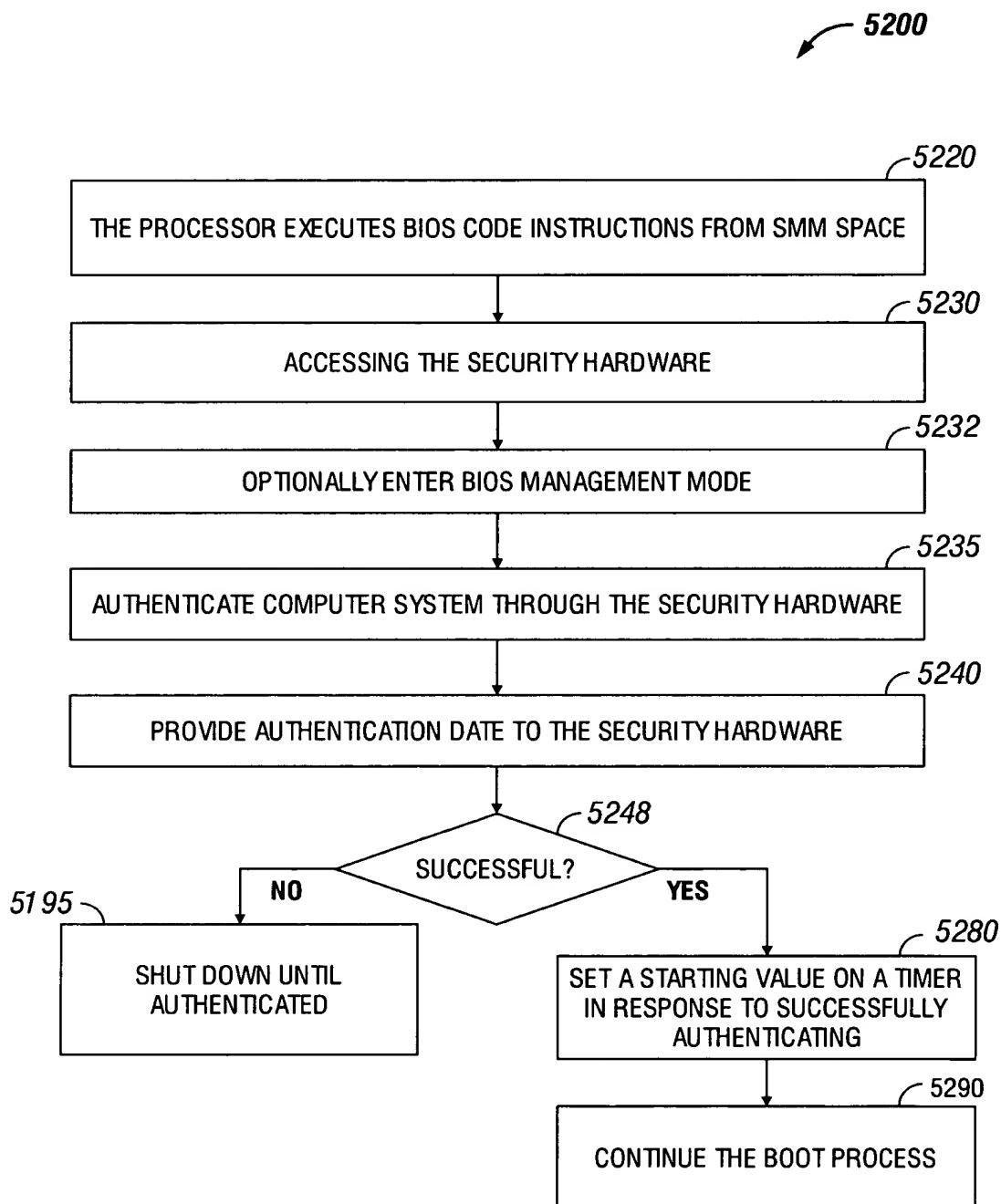


FIG. 41

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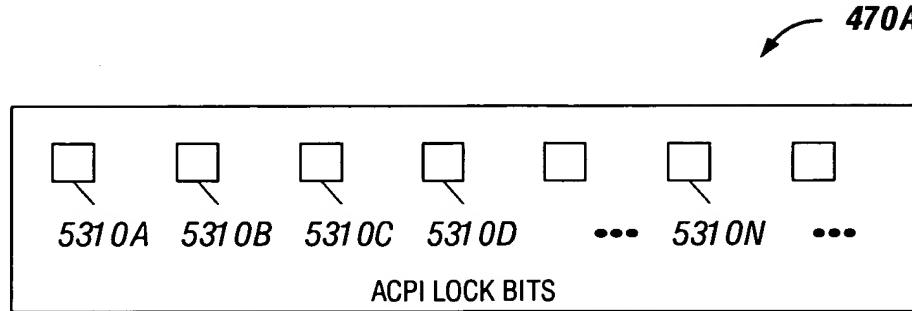


FIG. 42A

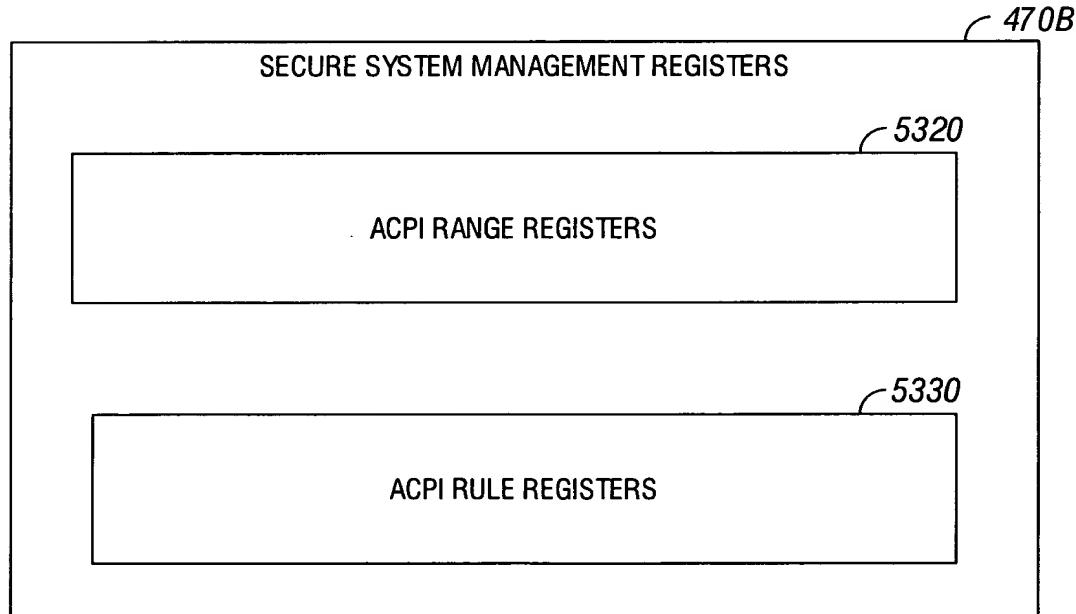


FIG. 42B